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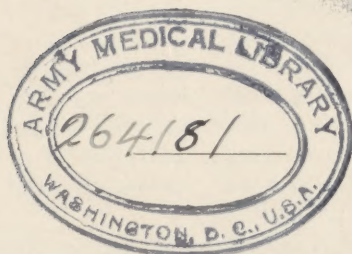
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THROMBO-ANGIITIS OBLITERANS*

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AND

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Gangrene appearing in a limb inspires one with a certain feeling of dread. It is an age old manifestation of disease. We find that Fabricius Hildanus, of Hilden, near Duesseldorf, regarded as the "Father of German Surgery" wrote his monograph on gangrene in 1593 and that he was the first to recommend amputation above the diseased part. Evidently our early predecessors in surgery regarded a gangrenous part as one to be gotten rid of. The earlier texts are for the most part silent on definite causes. We are more fortunate, however, in our present day. Now, we have access to some very enlightening research tending to clarify our conception of gangrene as a whole. When we consider for a moment that surface appearances are merely indicative of more serious and far-reaching trouble beneath, such as arteriosclerosis, Raynaud's disease, and other causes, together with the condition under discussion in this paper, the stimulus for study of the underlying cause is, therefore, at once aroused. Gangrene of itself is merely an end-result.

Leo Buerger's work on thrombo-angiitis obliterans and his description thereof constitute a classic on this subject. He has sorted out the characteristics of this interesting disease and placed them in contrast with those of kindred

diseases in his book on circulatory disturbances of the extremities in a very instructive way.

Without attempting a discussion of this interesting list of underlying causes of gangrene, we wish, first, to present a case of gangrene associated with thrombo-angiitis obliterans and, secondly, to show a method of demonstrating, macroscopically, the obliterating or partially obliterating process in the artery of the involved part.

This is the case of A. B., a Russian, aged 33 (not Jewish); first seen by Dr. Slatovski in October, 1924. The patient is single; is a forestry engineer, and was an officer with the Russian army. His mother died at 37 of tuberculosis. In the army he was nervous; sudden noises shocked him; and there was considerable exposure to long marches and cold weather, and the food supply was scarce. His complaint dates back several weeks before admission. He had pain in his right little toe. Preceding this, however, in the fall of 1923 he had a dull pain in his right leg, most marked in the heel. This he thought to be rheumatism until during the winter he had a severe pain in the great toe, and, later, in all the toes of the right foot. This pain came on in attacks and was much aggravated by cold. In the spring the pain involved the entire foot and he received treatment for flat-foot. Soon he began to have attacks of cramps in the legs while walking. Rest gave relief. During the summer tingling and numbness began, and about this time

*Presented at the meeting of Resident and Ex-resident Physicians of the Mayo Clinic, Rochester, Minnesota, October 20, 1925.

redness of the little toe appeared. He is not sure about blanching. He is sure the toe was redder when dependent. When admitted to the hospital gangrene of the little toe had begun. He was also having a similar chain of symptoms in the adjoining toe, and the pinkish color was spreading across the dorsum of the foot. He sits up most of the night, claims he has constant pain, and smokes cigarettes almost incessantly.

Examination showed a fairly well developed and nourished man of slender build; pupils, normal; throat, reddened; tonsils, small and rough. No cervical adenopathy. Heart, lungs, and abdomen, negative. Reflexes, present, though knee-jerks are a little sluggish. Hemoglobin, 86; red count, 4,960,000; white count, 15,700 with the lymphocytes 24 per cent and neutrophils 76 per cent. Blood pressure, 120/70. Coagulation time, three minutes. Wassermann, negative. Creatinin, 1.5. Urea nitrogen, 16, and blood sugar, 0.072. X-ray reading does not show any of the arteries of the affected limb. Only the bones of the gangrenized toe show some atrophy.

In spite of explanations his consent was given for amputation of the toe only. This was done under caudal and infiltration anesthesia in order to show him the condition and obtain his permission for more extensive amputation. Incisions made above the gangrenous toe revealed the tissues in very poor condition; and with his permission an amputation was done at a point of election above the ankle. Three days later the stump looked healthy. His smoking was reduced, and Ringer's solution was given via the duodenal tube according to the method adopted by McArthur. He took thus about four quarts a day, but he objected to the tube. The tube was removed, and he willingly drank from four to six quarts of water daily for several days, until edema began to appear in the good leg. However, the stump was showing three trophic ulcers. The stump is very sensitive at the popliteal space. The ulcer progressed, and the bones protruded; and a reamputation, this time above the knee, was done exactly three months following the first. The nerve was injected with alcohol at the time. One month later the wound was all healed, and the patient was up on crutches. An artificial limb was fitted about eight weeks later.

At the time of this report (nine months after the last amputation) he has gained about twenty-five pounds and looks well; however, he has some pain in the other leg at times but no characteristic symptoms.

The specimen: Immediately after amputation

above the knee, the specimen was taken to one side, and the blood vessels were washed out thoroughly with a continuous stream of normal saline solution. The vessels were then injected with a thin solution of well-mixed barium. The specimen was then taken to the x-ray room, and stereoscopic films were made of it. These films showed the irregular narrowing process in the popliteal and other arteries of the leg, as shown in the illustration.

Discussion: We will notice first the patient's age. He is thirty-five years old. Dexter and Ellis refer to the fact that of 73 cases the greatest number occurred between the ages of 31 and 45. Koyano in his observations on 120 cases found the youngest to be 14 and the oldest to be 60. The average was 37.2 years. The maximum liability to the disease fell at between 30 and 40. He found that all were males but one. About one-half the cases had a hereditary history of apoplexy.

We observe next that he is a Russian, though not a Hebrew. Dexter and Ellis refer to this matter. They found there were 17 Jews to 14 Japanese. Gilbert and Coury observed the frequent occurrence of thrombo-angiitis obliterans in Russian and Polish Jews. Buerger also refers to this point. In the order of frequency McArthur places the Jews first and the Japanese second. Orr reports six cases, ages 36 to 48, none of whom were Jews. They were all born in the United States. Men are more commonly affected than women, in the proportion of about 8 to 1.

Another observation concerning our patient is that of his excessive cigarette smoking. This feature is mentioned by Bean, Christianson, Gleckler, Levin, Meyer, and Sinkoe in their observations on cases of this type. Bean is inclined to lay considerable stress on this point in etiology. Meyer is also of the opinion that tobacco is an etiologic factor. Buerger, on the other hand, while he agrees that tobacco may be a probable predisposing factor and that it may be regarded at least as causing some alteration in the vessels which makes them liable to attacks of inflammation and thrombosis yet he states that it is exceedingly doubtful and highly improbable that tobacco is the only exciting cause.

The neurotic element has been emphasized by many workers, especially Buerger and Meyer. Our patient shows a marked neurotic background. He was easily upset by sudden noises and was a very poor sleeper. He is intelligent, artistic, and sensitive. He was subjected to severe hardships during his military experience.

Such a history is characteristic of many cases. Buerger, Meyer, and Koyano call attention to these factors.

The gangrene in our patient occurred on the right side. In Buerger's series of cases the left leg was the first affected in the majority of cases; however 71 of 171 were bilateral when followed long enough.

Etiology: The specific etiology is still veiled in obscurity. Many investigators believe an infection lies at the bottom of this condition. Rabinowitz did some experimental work in which he took blood from the affected area, and from this he isolated an organism which produced thrombosis when injected into the vein of a rabbit. He found the organism only in the region of the lesion. There is room for more research along this line. The idea of an infection is further strengthened by the persistent leucocytosis. Thomas is responsible for calling attention to this point. Our patient showed a leucocytosis of 15,000.

Pathology: The pathology points to an infection as the basis. The earliest process is that of acute inflammation of the artery with an occlusive thrombosis within the lumen and with giant-cell foci. This goes on to organization with disappearance of the inflammatory products. At

times there is canalization of the thrombus simulating a lumen within the thrombus. Along with this there is an accompanying periarteritis with development of fibrosis about the vessel. This fibrosis frequently binds together the vessels and also the nerve. Histologically there is seen also an hypertrophy of the inner elastic layer of the vessel. This has been most thoroughly studied and described by Buerger who has given the condition its present name. The principal process is always in the large arteries, with the smaller arteries or arterioles only secondarily affected. The veins show a similar process in many of the cases studied.

Symptomatology: Buerger in his book has described many types and has classified them from the symptom complex which they present. Many have their onset with "rheumatic" pains, as in the case we have cited. Others show first the symptoms of intermittent claudication manifest as cramps brought on by walking. Many are treated as orthopedic cases. Bean relates two cases which were so treated until gangrene developed. Our patient was thought for a time to be suffering from flat-foot. Tingling and numbness are also symptoms prominent in the picture. A chronic rubor, intensified by dependence or by cold and giving way to an ischemia when the

The differential diagnosis must be made between the following:

	Thrombo-Angiitis Obliterans	Erythromelalgia	Raynaud's disease	Arteriosclerosis
Age, sex, race	Young male Jews	All ages and sex	Adults young	Beyond middle age
Part most commonly involved	Usually feet and one more marked or single	Usually feet	Usually hands and symmetrical	Usually feet
Pain	Yes; often worse in cold or when dependent	In attacks with other phenomena	Often paroxysmal, Often paresthesia and anesthesia	Seldom spontaneous
Intermit. claudication	Usually present early	Absent	Absent	Usually the only subjective symptom
Rubor and Ischemia	Rubor intensified by cold or dependence. Ischemia on elevation	Paroxysmal rubor. No ischemia	First blanching; then cyanosis. Not influenced by position	As in T. A. O., but not as marked
Temperature of part	Cold especially influenced by outside temperature	Warm	Cold	Cold
Arterial pulsation	Absent at point higher than lesion	Bounding full during attacks	Present	Absent in sclerosed vessels
Trophic lesions	Nearly always in later stages	Rare	Are symmetrical and characteristic	May be
X-ray	No sclerosed vessels seen. Bone pathology with gangrene	No findings	Characteristic	Will show the sclerosed vessels
Other rather character. Signs	Presence of a migrating phlebitis is almost diagnostic	The sharp demarcation of the red areas is quite characteristic	Heat and cold alter the size of the vessels	Evidence of arteriosclerosis elsewhere

part is elevated, is indicative of a circulatory insufficiency. Finally, trophic changes appear, and eventually a gangrene begins. The time elapsing before gangrene appears is variable. Our own case was showing rubor for at least four months before gangrene began.

Diagnosis: The essential findings are a pulseless artery, redness when dependent, blanching when elevated; later, trophic disturbances and even gangrene. There is no evidence of syphilis, and the acute blood diseases may be readily ruled out. Many cases show migrating phlebitis, with cutaneous nodosities over the affected veins, which are readily recognized.

After carefully sorting out the essential data bearing upon the diagnosis of this condition we have prepared the preceding chart showing the symptomatology of this and kindred affections:

Treatment: The treatment suggested has been varied but may be considered under two headings, that is, conservative and operative. Because of the finding of increased viscosity of the blood by Mayesma, a treatment aiming to dilute the blood was suggested. Koyano gave Ringer's solution intravenously in large amounts. McArthur varied this by giving the Ringer's solution through the Rehuss duodenal tube, leaving the tube in place and giving one and one-half gallons per day. Koyano states that the pain was relieved and the viscosity lowered enough so that a cure was finally reached. McArthur treated two cases by this method and expected to obtain cures.

Other observers have used a treatment first introduced by Meyer. This consists in giving sodium citrate in large doses. Steel gave 250 c.c. of 2 per cent solution every other day for a month; then every three to four days during the second month. At this time the patient was allowed to be up if no trophic changes were present. He reported six cases. Two resumed their regular occupations; two progressed satisfactorily; and one was again under treatment after a relapse.

Destefano reported one case cured after four months of treatment. Stone considered one patient cured with this method plus Bier's hyperemia. Christianson also used this method in one case with a good result. He states, however, that his patient has an edema if he uses the foot very much.

Trosier and Ravina treated one case by this method with a cure after nine months. Sinkoe used Bier's hyperemia in one case with some improvement. His patient had no gangrene however. Recently Philips and Tunick reported the

results of roentgen-ray therapy in fifty cases. They gave a stimulating dosage over the lumbar vertebræ. They state that improvement is noted within six weeks. Ulcers were healed, and gangrenous portions became demarcated, even when well advanced. The radical amputation was done in only 2 per cent of the cases. Their studies cover a period of two years.

Our patient received this treatment for a period of weeks with little perceptible benefit. He has, however, received x-ray therapy directly over the popliteal region of the well leg, and such pains as he complained of have disappeared. He walks now about forty to sixty blocks daily and seems in excellent physical condition.

Bean brings out the fact that minor orthopedic operations may be done in these cases through a mistake in diagnosis and be the start of gangrene. He points out the fact that the extended time necessary to affect a cure is a drawback, and he maintains that radical surgery is a more economic method of treatment. He suggests exploration of the principal arteries at the time of operation and amputation above the limit of arterial disease. Diathermy has been advised, but there are no case reports on this method of treatment that we have found.

Silbert has suggested a treatment directed against the severe pain. He has injected the nerve with alcohol as peripherally as possible. He treated five cases in this manner; three were markedly relieved, one failed, and one required amputation.

Buerger outlines the treatment which he carries out. When the patient has no gangrene he gives heat by exercise, by Bier's hyperemia, and by direct application. He also approves of diathermy. In some cases local amputation will suffice, but he has found that a radical amputation is ultimately necessary. He amputates above the knee using the Gritti Stokes method.

SUMMARY

Thrombo-angiitis obliterans is an obliterating arterial disease occurring usually in the lower extremity, most often on the left side. It occurs commonly in middle-aged men. The etiology is uncertain. The pathology is well established. The main arteries are chiefly involved. The smaller arterioles are involved secondarily. Diagnosis is by exclusion of similar degenerating arterial diseases. No characteristic symptom has been described. Medical treatment has been found to improve temporarily, but rarely to cure. When gangrene supervenes amputation is indicated at a point above the area of arterial in-

vovement. In the lower limb this point is usually above the popliteal vessels.

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DERMATOLOGICAL CLINIC*

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PSORIASIS VULGARIS

The first case I wish to demonstrate is one of psoriasis vulgaris in a patient who has a positive Wassermann reaction. The patient is a male, aged 54, who has been an inmate of a State penal institution for a number of years. He does not give a history of syphilitic infection, nor are there any clinical signs of syphilis. The lesions on his body have been present for a great many years and he states that at times there have been many more than at present. The lesions vary in size from small papules capped with white lamellar scales to huge plaques as large as the palm. The lesions over the elbows and the knees have the thickest scales. The scales on all the lesions are easily removed, leaving a red base on which appear dew-drops of blood. This is a characteristic sign of psoriasis and is found only in this condition. One, however, must be careful in producing this sign, to only remove the scales, for any lesion can be made to bleed if scratched deep enough. After the scale is removed from a psoriasis lesion the area looks moist, but upon examination it will be found to be quite dry.

There are also lesions on the patient's scalp which have the same general characteristics as the lesions on the body, with the exception that the scales have more of a yellowish tint and are more heaped up. The three points in the diagnosis of psoriasis are the following:

1. Papular lesions, bearing lamellar scales, which are easily removed.
2. Pin-point bleeding.
3. Distribution. Lesions are usually found

on the scalp, on the extensor surfaces, over the elbows and knees and over the trunk. The face is rarely involved and the mucous membranes are never involved.

Psoriasis vulgaris is a skin condition usually running a chronic course which rarely begins before the age of ten years, and may continue throughout life. It may be ushered in with an acute onset with fever. The eruption, however, has a tendency soon to become confined to the areas of predilection and to remain there. The lesions may spread peripherally, or may heal in the center, making annular or girdle figures, or the eruption may consist of widely dispersed lesions all of small size. As a rule, the more acute the condition the more widely spread are the lesions. The diagnosis of this condition rarely offers any difficulty. The lesions, the distribution, the pin-point bleeding, and the absence of subjective symptoms are usually sufficient evidence to make a final diagnosis. In differentiation one must always consider a squamopapular syphilid. Here the scales will be found to be less profuse and usually not to cover the entire papule. The distribution of the lesions is rarely confined as in psoriasis and pin-point bleeding is absent. Then, too, there will be found other signs of syphilis, such as remnants of chancre, adenopathy, or mucous membrane lesions.

Treatment of psoriasis.—In treating cases of psoriasis, one must always determine, first, whether the case is acute or not. The acute case must be treated in a manner entirely different from the treatment of chronic cases. Then, too, treatment must be different on different parts of the body. For the acute cases we give heavy doses of salicylates and mild ointments, such as

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boric acid ointment or salicylic vaseline. In the chronic cases chrysarobin is the remedy of choice. This is applied either in the form of an ointment or as a varnish. For large areas the ointment is used, while for isolated areas on the body the varnish is used. Chrysarobin must never be used on the face or scalp, for it has a tendency to dye the hair and also produces a conjunctivitis; therefore the patient must be fully warned against the danger of applying any chrysarobin preparation to the head. Chrysarobin is applied always with the object of producing a chrysarobin reaction. When this reaction has reached its height the skin about the psoriatic plaques will be irritated and assume a reddish-purple hue, while the psoriatic areas themselves will be white and the scale likely be lost. At this point one must stop the use of chrysarobin and use a mild ointment, such as ammoniated mercury ointment, until the reaction subsides. Chrysarobin must only be used as long as lesions are present and must not be continued over an indefinite period.

When the varnish is used it is removed every day with benzine, and a fresh painting is made. Reaction with varnish is much slower. The ointment is used in strengths of 2 to 5 per cent either in vaseline or in zinc paste. The varnish is 10 per cent strength. In chronic psoriasis arsenic is also of value. It is given in ascending doses, either in the form of injections, Fowler's solution, or the Asiatic pill. The physician must always write his arsenic prescription on non-refillable blanks, for it is very dangerous to allow a patient to get refills of arsenic without medical supervision.

The ultraviolet ray is a valuable adjunct in the treatment of psoriasis, but is by no means specific. X-ray therapy may be used but only in the hands of an expert, for in so chronic a disease as psoriasis there is always a danger of Roentgen dermatitis.

In regard to the positive Wassermann in this patient: there are no other signs of syphilis and the patient is confined so that he will be constantly observed; therefore I do not believe it is necessary to treat him because of this one positive test. In general, it may be stated that where psoriasis exists in a syphilitic patient and anti-syphilitic therapy does not influence the psoriatic lesions, an occasional administration of salvarsan does not cause a regression.

ACNE VULGARIS WITH ROENTGEN RAY DERMATITIS

This case is very instructive and I am glad of the privilege of demonstrating it because it brings out the great dangers in the use of the Roentgen

rays. This young man stated that he had pimples on his face since he was a small boy and that some five years ago he was treated by a physician with X-rays. He stated that he had weekly treatments over a period of a year and a half.

You will note that the skin is very dry; that there is no growth of hair in the bearded region, and that even the eye-brows are lost. The skin is of a reddish color, and on close examination you will note that it is scar-like and tiny blood vessels are noted throughout. This telangiectasis is one of the symptoms of a chronic Roentgen dermatitis. The loss of hair and the extreme dryness are due to an atrophy of the pilosebaceous apparatus, which is also a direct result of the use of the x-rays. The few acne pustules that remain probably are the remnants of the original condition for which he was treated. There is no question that x-ray therapy is a very valuable and highly to be commended form of therapy for a great many skin conditions, but they should be applied only by one well versed in the methods and dosage to be employed in the particular case. A very good rule to follow is that, unless there is a distinct indication where the operator is dead certain, more than five or six suberythema doses of x-rays should not be applied to the same condition, and then not oftener than once in two or three weeks, or, still better, x-rays should not be used at all if there is the slightest doubt about the technic to be employed.

The prognosis for chronic Roentgen dermatitis is very bad as far as the condition itself is concerned. The atrophic scarring cannot be remedied, while the telangiectasia can be benefited only by most tedious use of electrolysis or cautery, and then the cosmetic result will not be good. Furthermore, keratoses and malignant degeneration must be constantly watched for in chronic x-ray dermatitis. Therapy in this particular case must necessarily be one of patient watchfulness. A mild cream may be used to anoint the skin, but there is no specific remedy.

The few acne pustules that remain need not be treated.

PAPULONECROTIC TUBERCULIDE

Tuberculosis of the skin, although not an extreme rarity in this locality, at least does not occur with enough frequency to make it a well-known condition. The reaction to the tubercle bacillus is varied and is divided clinically into those forms of tuberculosis of the skin in which the tubercle bacillus can be found with certainty

and into those forms where it is rarely, if ever, found.

The first group is called true tuberculosis of the skin, and embraces such well-known forms as lupus vulgaris and scrofuloderma, while in the second class are found the papulonecrotic tuberculides.

This patient presents a fine example of the latter condition. She is fifty-four years of age and was born in Norway and has lived on a farm in South Dakota for the past thirty-five years. She states that her first skin lesions appeared when she was a girl and consisted of very slow-healing pustules on the shell of the ear and on the fingers. You will note that the rim of the auricle is irregular as though it were chewed out, and shows distinct scarring. This is the characteristic scarring of papulonecrotic tuberculides. On the fingers are also noted small white punched-out scars. The eruption is distributed over the forearms, especially in the vicinity of the elbows, and over the calves of the legs. The lesions vary in size from .5 to 2 cm. in diameter. They are composed of a necrotic center, surrounded by a halo of pustular tissue and outside of this another halo of a reddish-blue erythema. Some of the lesions have crusts which, when removed, show an underlying shallow ulceration with very little secretion. Interspersed among the active lesions are numerous white, almost transparent, sharply demarcated, or punched-out scars. She states that her general health is not much affected and that she is able to carry on her arduous duties of housewife on the farm. There are no lesions on the mucous membranes. The Wassermann reaction on her blood was negative, and there are no signs of syphilis.

The papulonecrotic tuberculides are more common in the early years of life and are very apt to occur in crops, one series healing sometimes completely before a fresh outburst occurs. Patients who exhibit papulonecrotic tuberculides sometimes show other forms of cutaneous or systemic tuberculosis but usually possess a high degree of allergy; that is, with a minimum amount of stimulus a fairly destructive lesion is produced. It is supposed that the bacilli are carried in the blood stream and deposited at the site of lesions, but reaction of the individual is so active that the bacillus is destroyed very early, but the lesion is produced from liberated toxins so that bacilli are not found in the secretion. The pathology is often typical tuberculoid structure, but in some tuberculides the reaction is so acute that tubercles are not formed.

The therapy should be the same as for a systemic tuberculosis and the use, locally, of the ultraviolet ray. Ravaut, in France, and Stokes, in America, have strongly advocated the use of salvarsan in these conditions. If it does not act as a specific, it at least acts as a powerful stimulant and certainly gives relief when taken in

sufficient quantity over a long enough time.

The prognosis for the tuberculides depends to some extent on the economic position of the patient. If he is able to lead a quiet and hygienic life the prognosis is bettered. The lesions themselves usually heal without much difficulty.

ECZEMA

(Two cases)

Eczema is defined as a catarrhal inflammation of the skin which begins as an erythema and passes through a cycle of various phases, beginning usually with an erythematous stage and progressing to a vesicular or weeping stage, when the process has a tendency to recede, often forming crusts or squames.

Pathologically, eczema and dermatitis are identical. Clinically they vary in that acute dermatitis is composed largely of lesions of one age, while eczema is usually multiform. Also the removal of the causative irritant, which is most often an external one, brings about a rapid involution in dermatitis, while no known procedures will subdue the inflammation and prevent recrudescence in the case of some eczemas.

Eczema is in reality a group of symptoms in the skin which can be produced by innumerable causes. Every disease condition which resembles eczema for which a definite cause has been found has been removed from this category, such as scabies, seborrhea, and epidermophytosis, which leaves us eczema, a disease of unknown etiology.

CASE 1.—The first case is a papular eczema of the neck region. We notice that there are numerous inflammatory papules. Each papule, however, is discrete, and they are distributed in no particular arrangement. The papules vary in size from pin-point to pea and are all of a deep-pink color. Some of them are excoriated on the very tip, which is probably the result of scratching, for there is considerable itching present with this type. In differentiation the lichens alone need to be taken into consideration. Here the color, size, and shape of the papules and the history of the appearance are sufficient to rule out these conditions. The treatment will be sponging the part with calamine lotion three times a day, which I believe will be all that will be needed.

CASE 2.—This case shows a severe vesicular eczema of the face, and in this case the process is much more acute. The symptoms are also more intense because of the inflammation and the exudation of serum. It will be noted that there are many minute unruptured vesicles and also many vesicles that have ruptured and are oozing a clear, sticky fluid. The inflammation seems to be in rings, and there is a considerable red areola about each area. The oozing is not very copious, and in some areas the secretion has coagulated, making yellowish crusts. In this case wet packs of lead acetate and alum solution are indicated until the acute stage

subsides, when the condition can be handled according to the indications at that time.

The etiology of eczema is not known, but the external irritation must always be looked for, especially irritants that have an occupational source.

I wish to mention a few special forms of eczema and make a few remarks that may be of some practical benefit.

The head: Dermatitis of the head is frequently due to the use of certain remedies for the scalp. Regardless of how acute the condition may be I have found that the first step in treatment is a thorough shampoo before instituting any other treatment.

Ears: The ears are frequently the site of a chronic seborrheic eczema. Here fissures will usually be found between the shell of the ear and the head, and the fissures positively must be cured in order to get a result with the eczema. Painting with 25 per cent silver will usually cure the fissure.

Eye-lids: The eczema of the eye-lids is very difficult to handle, and one must always look for conditions of the eye itself or the use of eye remedies which may be causing the trouble.

Face: Most dermatoses of the face are of external origin, occupational, or some form of plant poisoning. The eczema of the hands and of the feet frequently is due to a fungus infection. In fact, the greater percentage of so-called eczemas of the feet are fungus infections, and this condition should always be thought of first when dealing with an acute skin condition of the hands and feet.

SCABIES

(Two cases)

Although scabies is one of the most common of the skin infections, it may be the most difficult one to diagnose, and the treatment is always tedious and must be properly carried out or reinfection is sure to occur. The clinical picture is somewhat obscured by the artificial dermatitis, which is caused by the scratching or by pyogenic infections which come from the same source.

A patient usually presents himself complaining of an intensely itching eruption which is much worse after he has retired. The itching is intense enough to disturb or even prevent sleep. On minute examination it will be found that his eruption consists of numerous minute vesicles or papules, having a longitudinal burrow with the vesicular end on top of them. Crusts may cap the papules, from scratching. The scratch marks found in scabies are usually longitudinal, and because of the intense scratching the crusts are

often bloody. The location of the eruption is very important. Scabies is essentially a "front-sided" disease. The eruption will be found on the interdigital webs, over the thenar eminence, the palmar surfaces of the wrists, often over the point of the elbow where the eruption is frequently pustular, in fact, a pustular eruption occurring on the elbows should always cause one to examine the rest of the body for scabies. The eruptions occur also on the anterior abdominal wall, about the umbilicus. The axillæ are apt to be involved in children and infants, so often that Leiner states that if the axilla is free in a child the eruption is not due to scabies.

Of diagnostic value is the presence of indurated crusted or burrowed papules on the male genitals and about the nipples on the female. Furuncles or pustules over the buttocks are also suggestive of scabies. Scabies is definitely due to a parasite, the female burrowing into the skin to lay her eggs, thus causing the cutaneous reaction. After exposure symptoms do not develop for about ten days, and it takes from six weeks to three months for generalization. The acarus seems to be more prone to infest some people than others even though there is no definite immunity. After being infested the individual will harbor the insect for a long time. In fact, there seems to be no spontaneous cure.

The diagnosis is made first on the lesion, which, as I have said, is a crusted or burrowed papule; secondly, on the topography. Scabies almost invariably affects the areas as outlined, although there are atypical cases; and, third, the nocturnal itching.

From generalized eczema it is differentiated because in eczema the eruption is cyclic, does not itch so much, and the face is usually involved. It is diagnosed from urticaria because in urticaria the lesions are evanescent and the typical lesion here is a wheal.

Dermatitis herpetiformis is frequently misdiagnosed scabies. In this condition the lesions are multiform, but at some point there is quite apt to be a grouping of vesicles of a herpetic type. The back is frequently involved, especially the scapular region, and the subjective symptoms are more of a burrowing pain than of a severe itching.

Treatment: Treatment of scabies must take into consideration the destruction of the parasite, the healing of the injured skin and the prevention of recurrences. I use two different treatments.

First, the Wilkinson method. This means applying Wilkinson's ointment over the body, es-

pecially in the areas of infestation, for five successive nights, then leaving it on for two more nights before a hot bath and a complete change of clothing are ordered. Zinc paste is then applied to calm the skin.

The other treatment that I frequently employ is the one devised by Professor Oppenheim, of Vienna. He had occasion to treat thousands of cases of scabies just after the war. In fact, he built a special hospital in which he treated nothing but scabies. The patient there is first given a ten-minute rub with liquid soap and then a brisk tub bath for twenty minutes, after which Oppenheim's ointment, which consists of

R:

Sulf. ppt.....	20.0
Pot. carbonat.....	10.0
Vaseline	120.0

is applied over the entire body and the patient is wrapped in a blanket and allowed to rest for about two hours, when he is given a second hot

bath and zinc oxid is applied to the irritated skin zones. The clothes are boiled or sterilized by other means. This is a very successful, clean, rapid, and cheap form of treatment. If a single treatment does not suffice it may be repeated.

Complications: There are two complications of scabies:

First, pyogenic infections. If either impetigo or furunculosis is present the scabies is first treated and the pus infection later. The scabies must be cured before the pyogenic infection will subside. The other complication is known as acrophobia, and is observed in people who have had scabies and refused to believe that they are cured, or in members of a family who have been infested. In handling the first group one must insist that the treatment has been adequate and urge the patient to use only some mild antipruritic. In the second group it is best to give them one treatment and then insist on their realizing that there is no further infestation.

HEREDITARY TRAITS AND THEIR RELATION TO THE HISTORY OF THE INDIVIDUAL*

By W. A. JONES, M.D.

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For the past few years investigations in genealogy have been awakening the interest of people of middle or elderly life; and it is interesting to note that in all their investigations of their ancestral tribe nothing is said of the diseases from which their ancestors suffered, consequently it is almost impossible to get a fair or accurate line of the history of hereditary disorders because there are no printed or written statements as to ancestral traits, matings, and families, including all the offspring or even the indirect line of ancestry. Consequently we are forced to accept what we can find in the individual. By careful investigation we are able to trace at least one or two generations to get some evidence of disabilities that are either actual or surmised.

We know very often by the examination of a patient that he is underdeveloped, underfed, that his father or mother or grand-parents suffered from some defects in development, and that he is the recipient of their faults, physical faults, and not infrequently mental faults, as well. A study of such people leads to many confusing results. Many of these primarily defective or

predisposed and inheriting individuals are often looked upon as having temporary conditions, and the remedy may lie in the realm of surgery or some other department of medicine or its special branches, whereas the fact is that the individual is predisposed, predetermined in his construction, with all his faults handed down to him from remote agencies.

He really is a neuropsychiatric individual because he is defective in his structure, which affects his nervous system; or the structural defect is in the nervous system entirely, yet he becomes the butt and the attack of many lines of specialists, and, I am sorry to record, he is often the subject of needless and faulty operative procedures.

What can you expect of a man who has a bad line of ancestry, a bad hereditary history, perhaps accompanied by accidents or injury to his nervous system during his active growing period? While he is primarily predisposed to disorders, the incidents of life, the stress and strain of his environment, and the accidents which befall him physically or mentally should be considered before a diagnosis is made and treatment is ordered, not with any expectation of healing him

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permanently, but of making his life more reasonable and bearable, making him more comfortable and making it easier perhaps for his associates.

If you will take the time to consider what has happened to most people with their predispositions, those who, according to the Bible, are predestined to phases of disease you will more readily see how difficult it is to care for them and to treat them, and how necessary it is, until we know better, to have them in institutions that are prepared and equipped with apparatus and with methods for their improvement at least or, if not for their improvement, for their safety.

Conklin, the biologist of Princeton University, says that heredity is the organization of the germ and all that depends upon it. But, in getting the history of heredity, very little can be found which is of help except when the ancestry is well known and a reasonable record of the diseases and disabilities of the ancestors can be obtained. The question of heredity is so great that I do not feel like taking up your time by going into the various hypotheses and theories, or even the facts which are obtained from students of heredity. Then, too, the discussion which is constantly going on between debaters is about the environmental influence upon hereditary subjects.

It is impossible according to most authorities on biology to separate these two headings because they are interwoven so closely that to separate one from the other would be a very delicate mental-surgical procedure. The question also has much to do with our subject as to eugenics and race improvement. That is still in the dream state because it is conceded by most authorities that eugenics is a very difficult problem, and it is quite unlikely that our present or future social interests will succeed in carrying eugenics to any great degree.

Man at present probably has reached his highest intellectual pedestal; and he has certain limitations beyond which he cannot go because his endeavors will be such as to overthrow him. We must then be satisfied with a moderate or advanced intellectual survey in order to keep the race in a fairly reasonable attitude toward all these subjects.

Eugenics contains in its study many of the problems of biology, of psychology, of economics, of political science, of practical politics, of climate, of race, of art, history, and education, and of morals and religion; and all these forces play ceaselessly, whether he will or not, reacting upon the organic origin and destiny of man. (Conklin).

Can you imagine all these propositions being

brought to the attention of an individual or a class and carried out to their completeness?

Unless man understands heredity he cannot possibly understand human life; he cannot understand one of the largest forces, probably the largest, that has made him the kind of a mortal being that he is, and although every man would like to know how he came to be what he is, how he came to have his bodily size and appearance, his weakness and strength, his likelihood to contract this or that disease, his capacity to do this or that kind of work, his peculiar sort of temper and temperament and his general mental and physical makeup, tendencies, and peculiarities—unless he understands heredity he cannot form an adequate conception as to where his own natural endowments came from or what he will transmit to his children. He cannot know whether his strength or weakness lies in his hair or his brains, or whether he got them all through well-understood processes from some of his ancestors and is likely to hand them on by the same processes to his descendants.

The marvel of the whole situation is that so many people have come through with even a fair heredity when we realize that a part of the germ cell has its chromatin threads, which are destined to play an important part in the future of the individual, and are so delicate that it would seem as if almost any incident would change the whole course of their growth. And probably the growth and development of the individual has been changed more often than we can comprehend. The study of biology, of evolution, of heredity, and of environment has now developed a common belief, although not universally accepted, particularly as to the theory of evolution, as has recently come out in the trial in Dayton, Tennessee, where Mr. Bryan and Mr. Darrow crossed swords intellectually. Yet every man who is a student, who reads and thinks, and who is interested in the sciences, believes enormous strides have been made from the scientific angle, and very naturally many men believe in heredity and evolution and environment, while others pin their faith to environment entirely.

As has been said before, these matters cannot be separated, so we assume that nearly everyone believes in heredity or, as the popular phrase goes, "blood will tell," in plants and animals. This needs no further exposition because it has been shown by biology that plant life can be changed entirely, and it has been shown by scientists that they can produce the highest grade animal if they match the best of the species. This same rule,

of course, might be applied to the human race, but, unfortunately, our sentiments and emotions are such that very little science is used in racial progress. Some people believe that good children are born from bad parents quite as often as from good parents, that health comes out of weakness, and that wisdom is the fruit of the family tree of fools. A great many people believe that when children are born weak, unhealthy, shortlived, or foolish, education, moral teaching, medical science, and good environment will transform natural weakness into strength, folly into wisdom, and put brains into empty heads. This is disproved by the fact that, as Conklin says, people do not inherit wooden legs, but they do inherit wooden heads.

The environmentalist, in his effort to improve human weakness, finds that his theories are only adaptable for certain people, and if he could go back into the family history as far as he can investigate he would find that weaknesses similar to those in the offspring were observed decades ago in the ancestors. One must look nature square in the face. Good education and good environment should be given to every child that comes into the world, but these things will never add anything to the child's natural inherited equipment. The result is that we do not all have an equal biological chance, for there are the wise, the prudent, and the strong, the foolish and the weak, and unless we improve the lazy, the shiftless, and the hair-brained we shall have to provide for them in some way. They are not a progressive race; they are regressive and recessive, and will drag civilization down. You know the amount of care given to the defectives in life; schools for the feeble-minded, prisons for the criminals, hospitals for the insane, and all sorts of other methods of care built on a colossal scale are really asylums for the temporary improvement of the individuals who later go out and propagate their kind through their original germ cells.

Heredity, meaning "blood will tell," is a truism, but some wit has added, "Sometimes the less it tells the better!" You have heard about Mr. Smith's experience with a fine female setter pup for which he paid \$150. It waxed rapidly in stature and, as the owner supposed, in wisdom; but reckoning on pups is a doubtful business, and this particular pup was scared to death by the scratching of a match, as she was a gun-shy pup. In order to get revenge he mated her with a champion Rodfield, the greatest sire of bird dogs the world, up to that time, had ever known. There had not been a gun-shy pup in Champion Rodfield's pedigree since some peace-

loving Chinaman invented gunpowder. In due time Mr. Smith's dog presented him with nine little puppies. Mr. Smith saw his money coming back very rapidly, but he forgot one thing—that blood will tell sometimes only on one side,—and all her puppies were gun-shy! One man told Smith that he tried to shoot his dog, but that it ran so fast the shot failed to catch it! Smith is now a wiser and poorer man.

The fact that blood will tell has cost the lives of families and caused the downfall of empires. It has cost America a large share of its labor troubles, its political chaos and many of its frightful riots and bombings,—the doings and undoings of its undesirable citizens because they have descended from undesirable blood overseas. Hence the immigration problem. Poor blood mixing with better blood frequently produces a bad set of descendants. The notion that environment will transform in reality one kind of people into another kind of people is just as fatuous, as one Western congressman bluntly put it, as the belief that you can run a dairy with a herd of mules.

Martin Kallikak, of Revolutionary times, let his foot slip 150 years ago, and the feeble-minded woman with whom he cohabited brought about 480 nation-destroying inhabitants, including all kinds. Martin subsequently made a good marriage with good blood with the result that 496 nation-building descendants came from him and his good-blooded spouse. You will recall the famous Ada Juke, the mother criminal with 1,200 descendants, which led someone to say, "You cannot raise high-grade hogs from low-grade people!" When we consider all the biological faults, the mixing of unequal blood streams and the instances and defaults which occur during pregnancy and delivery, together with the inherent factors which may be found, such as tuberculosis and syphilis, peculiar characteristics which are either handed down or imitated, atavistic tendencies, epilepsies, feeble-mindedness, functional nervous diseases, and the transmission of other conditions, it is not astonishing at all that there are so many functional nervous disorders and so many mental peculiarities or mental diseases. It is said, perhaps on unauthoritative grounds, that approximately 75 per cent of the ills of the present day are mental. And in that we must include the hereditary and environmental associates, because they are accepted as far as they can be found.

The laws of heredity have not long been known. Gregor Johann Mendel, an Austrian monk, in 1866, discovered that he could control plant life; that he could improve plants by proper hybridiza-

tion. After that time, 1866, until about 1900 Mendel was nearly forgotten, but interest in his efforts was revived twenty-five years ago, and heredity now has become a very well-established factor in the human race.

Then, too, we must consider in all these peculiar people that they may have disorders and diseases due to toxic states; and perhaps in some instances the hereditary factor is highly important, while in others the toxic condition is not so striking in its results. Another angle of heredity is from the disease point of view. It is probably true that some diseases are inherited, or at least, heredity is a predisposing factor, but it can be said to be so only in a restricted sense. For a long time we supposed that syphilis and tuberculosis were along the hereditary predispositions, and yet as a matter of fact there have been few cases of inherited syphilis demonstrated, and those so-called cases of inherited syphilis prove to be contact syphilis, just as many so-called inherited tuberculosis cases are contact cases; consequently the terms are used as the customary, and not from the accuracy, point of view.

We observe similarity of features among members of the same family, and sometimes the resemblance is a very conspicuous one, as between father and son or mother and child. Or it may be true as to physical characteristics, and sometimes it is observed in mental attitudes, in stature, and in the color of eyes and hair, the shape of the nose, and other indications of similarities. Thus many of the diseases are simply abnormal characteristics, both in the progenitors and the offspring, as certain forms of cataract, night-blindness, color-blindness, hemophilia and variation in the digits. The same law of heredity applies to the occurrence of physiological, as well as biological, tendencies. Characteristics not possessed by one or more progenitors cannot be transmitted to offspring because they may not have been present in the germ cell; the offspring, therefore, may be a pure breed.

The assumption is true that human beings cannot be controlled as Mendel controlled his plants, because of varying problems which deal with and produce more complex organisms. Mutation, or changes, and induction are factors which must be considered. New characters appear in the stock. These arise without regard for the characteristics of the ancestors, and they are due to variation or mutation, a change which occurs in the development of phenomena concerned in the germ plasm cell attachment. A neuropathic state by mutation may be created by the continued action of some toxic state in the parents, such as a tendency to hyperthyroidism or hypothyroidism

and its train of manifestations. These intoxication states, of whatever kind, may produce dwarfed, weak, and sickly offspring, yet they occur in only one generation and, therefore, cannot be strictly hereditary. These are instances which give rise to the examples of alleged transmission of acquired characteristics. Among these characters are people who are called geniuses, and genius is sometimes associated with a predisposition to mental disorder or other forms of nervous instability, and Lombroso has said that genius is a neurosis.

In some families one member has been noted as a genius, while others have been known as suffering from serious mental or nervous disorders. Many of the best known men in history were victims of nervous or mental disease. Julius Cæsar, Flaubert, and Napoleon were epileptics. Mozart, the great musician, had defective children. He himself had been precocious and had hallucinations. The children of Peter the Great and Victor Hugo were defective. Guy de Maupassant was insane. Baudelaire was a general paretic. De Musset was a drug addict. Rousseau had delusions of persecution and suspicions. Schumann was depressed and suicidal. Many other types might be described, particularly among the abnormal imbeciles or high-grade morons who are particularly brilliant in one particular. To this type belongs the mental calculator, or the man who has an unusual aptitude for remembering dates, or unusual dexterity in playing musical instruments, as illustrated by Blind Tom. In this other class belong the young people who play chess and do all sorts of brilliant stunts in young life. But they are apt to die prematurely of dementia or degeneration,—and here degeneration is used from the standpoint of heredity, implying the defective peculiarity to transmit perfectly normal characteristics or functions.

Many people who suffer from nervous and mental disorders come from parents who are alcoholic or who have suffered from Bright's disease during the period of gestation, and the child becomes marked with some stigmata of degeneration. Those are called congenital degeneracies, which must be distinguished from the true hereditary degeneracy. The greater transmission from parent to offspring appears to be from the female side. The individuals who die of old age, who escape disease-accidents, are fortunate in having a favorable environment and not because they are free from hereditary predisposition. There are certain individuals, candidates undefeated to alcoholism, syphilis, and tuberculosis, because it may be that they simply inherited a lowered resistance.

The psychotics may be considered to form two great classes; first, those who develop psychoses irrespective of their environment, paranoid and manic depressive psychoses. The second class are those who develop psychoses provided there exist the proper environment and exciting cause, the puerperal and other toxic psychoses, general paresis, and organic dementia. These may be looked upon as accidental psychoses.

CONSANGUINITY

Everyone has within himself a host of family skeletons. He is often wholly unaware of them. Sometime way back in history there may have been a grand-father or grand-mother or other distant relative insane. Even as far back as ten generations there may have been a silly old dame who was a holy terror in her day and time; and somehow the germ cells carry her determiners, and it crops out in some unfortunate member of a family. Again, there may be drunkenness or epilepsy. These may not appear in the future children. However, if by any chance a woman marries a man who has all these errors in his blood it will crop out. At the same time we must keep in mind that while a man or a woman is carrying the skeletons of the family they also carry a large host of virtues, so that perhaps virtue may predominate over disease or defect, and thus a healthy strain is brought about.

There has been a good deal of talk about cousins marrying, and both the church and the law have pondered on it and shuddered at it. Even in the 18th chapter of Leviticus there are thunderings of divine wrath upon "the man who shall approach unto any that is of near kin to him;" and yet cousins marry, near cousins as well as distant cousins, brother and sister marry, father and daughter marry, and if the strain is good there is no probability of any outcropping of any unfortunate, but if the strain is bad there is the same likelihood as there is in the mismating of other adverse or contradictory strains.

In ancient Egypt during the reign of the Ptolemies, who ruled over Egypt and gave it a polished and brilliant civilization for many centuries by the sheer intelligence and character of its members (this includes the ancestry of Cleopatra), there was the highest inbreeding in recorded history without ill results. The family furnished illustrious and able rulers for centuries. Many similar brother-and-sister and uncle-and-niece marriages took place among them. The families of the present rulers of Siam have intermarried in similar manner for four thousand years except in the past two generations. The

marriage of Charles Darwin with his cousin Emma Wedgewood, grand-daughter of the founder of the great Wedgewood potteries, has resulted in four sons who have been ornaments to England. Other families bear the same resemblance or give the same history of intermarriage with the same good results. It has been said by Wiggam that dominant qualities, under typical conditions, do not ever skip a generation, but recessive qualities may skip one or four generations. On the other hand, intermarriages have wrecked some of the royal houses, particularly the Houses of Spain and Austria after insanity had crept into the blood, probably through the grand-mother of Charles V of Spain. Among the lower families like those which have been mentioned and sometimes among those higher up in the scale there runs a tendency to suicide. One small place was known as "Suicide Town," and all the people who lived there who were in any way tainted with this reaction lived in constant fear of killing themselves. There are innumerable instances in history showing that many of the royal families have handed down not only good physical conditions but highly intellectual and moral strains. And in one place there has been recorded 300 years of inherited virtue. The Saxe-Coburgs and the Brunswicks were all a powerful race, and they showed by their descendants not only great women in royalty but great men who have been known to history for years.

Among the Eskimos in North Greenland, living within an area of 250 miles, who have intermarried for years, imbecility and congenital physical defects are almost unknown, for the reason that the ancestors were free from defects. Where marriages are common among defectives, of whatever type, investigation has revealed the occurrence of many examples of inherited physical and mental defects and disorders.

The difficulty of ascertaining the heredity percentage is that the relatives and friends of patients really know nothing about it. They have no genealogical tree, nor is there any way of ascertaining whether any bad strain existed as far back as even the second generation. Then, too, the belief prevails among persons that to be a member of the family in which there is a taint of mental affection is a disgrace, so that the facts are frequently concealed.

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INTERNAL MEDICINE: A CLINIC*

By E. L. TUOHY, M.D.

DULUTH, MINNESOTA

I wish, first of all, to express my great pleasure at being here with you to-day. Without delaying further, the plan I shall follow to bring out for you some of the important features relative to cardionephritic and cardiovascular associations will be to ask Dr. Gage to bring in the patients, and then as he reads for you his summary of the case-history I will note a few of the important factors concerned on the blackboard.

CASE 1.—DR. E. E. GAGE: This first woman is forty-two years old. She has been married for eight years and has one child. She had the usual diseases of childhood, including diphtheria, influenza, and rheumatic fever fifteen years ago. Her present trouble began two months ago when her feet commenced to swell, and she had to get up during the night to urinate, although this latter trouble had been present for a number of years. At times she complains of dyspnea on exertion and of being tired. Her lower limbs are markedly swollen, with indurated, erythematous patches from her knees to her ankles. The heart is somewhat enlarged. Her blood pressure is 130 systolic, 80 diastolic. The urine is negative. The wet test showed 1,600 c. c. in four hours. P. S. P., 80 per cent.

DR. TUOHY: This patient has the appearance of health. She has an even, regular pulse, slight loss of weight. Will you tell us how sick you were when you had rheumatism?

PATIENT: I was in bed about fifteen days at that time. My legs were swollen to the knees and my arms to the elbows.

DR. TUOHY: How painful were they?

PATIENT: Not very painful.

DR. TUOHY: Were the legs more swollen than the arms?

PATIENT: No, I think not.

DR. TUOHY: Was there any sweating?

PATIENT: No.

DR. TUOHY: How have you been since you recovered from this attack?

PATIENT: I was well until just recently.

DR. TUOHY: Did you ever have a previous attack of what you call "rheumatism?"

PATIENT: No.

DR. TUOHY: This scarcely looks like a true history of rheumatic fever. She had no sweats, and evidently the joints were not very painful. The history and findings suggest normal kidney function, with a normal output. I would call particular attention to the description of the erythematous nodes. Where were they?

PATIENT: From the knees down. You can see them; they are still there.

DR. TUOHY: At this time if there was a definite instance of rheumatic fever one would look for a possible endocarditis, and yet this woman presents none of the characteristic findings of endocarditis, and while I would not wish you to think that auscultation is the best means of examining the heart, the tones seem natural, clear, and full. I have an idea that we have something here which is very different from rheumatic fever, namely erythema nodosum.

Erythema nodosum swelling is one of the odd things that occasionally a doctor opens as if it were a blind boil. The ultrascientific are apt to classify it etiologically as one thing or another, including tuberculosis. It probably is in the adult a second cousin to true rheumatism, and comes from focal infection. This woman has had these lumps for two months, and they are getting better. I cannot explain why her arms swelled. I have never seen erythema nodosum cause lumps on the arms. It is odd that they should occur so characteristically on the lower extremities. As the lumps disappear her legs will be all right. Associated with this development of the nodules there is evidently something bearing on the important question of edema. In these cases there is probably a metabolic upset in addition to the infection. One should look for evidences of focal infection, but whether the source is found or not, it is a self-limited disease. We go far in medicine when we can tell patients how the course of a disease will run. The patient thanks one more for accurate prognoses than for skilled diagnoses. The salicylates are of some benefit in these cases, and act better when mixed with wine of colchicum.

CASE 2.—DR. E. E. GAGE: This little girl is eleven years old, and her family history is negative. She entered the hospital on March 28, 1923, with a history of measles, whooping cough, diphtheria, and influenza. It was stated that about three weeks prior to admission she had what was thought to be an attack of grip. She had a skin eruption at this time but was seen by no physician. Soon after the beginning of her illness her ankles began to swell, and there was puffiness of the face, especially under the eyes. Her treatment at home was without results and she was brought to the hospital.

On entrance she was markedly anemic; there were puffiness under the eyes and edema of the ankles. The tonsils were large and infected. The urine showed 2+ albumin, and many red cells and some pus cells. During the first week in the hospital there there was little change in her condition. The urinary findings remained about the same. The daily output ranged from 150 to 500 c.c., with an intake of 2,000 c.c.

On June 20 an adenoidectomy and tonsillectomy were performed. The following day she exhibited quite a reaction, with a temperature of 102.4° F., pulse 112, and signs of general edema. This condition lasted for about a week, and then she began to improve. On July 14 her condition had improved to such an extent that she was allowed to go home.

*Presented at the forty-fourth annual meeting of the South Dakota State Medical Association held at Sioux Falls, S. D., May 21 and 22, 1925.

At that time her urine showed only a slight trace of albumin; her blood pressure, systolic, was 138; diastolic, 90.

On May 20, 1924, the patient again entered the hospital with 4+ albumin. She was given hot packs, with a restricted diet. A P. S. P., made on June 20, showed 62 per cent elimination in one hour and forty-five minutes. Blood urea, 20 milligrams. The patient was again discharged from the hospital on July 10, 1924, feeling much improved and showing only a faint trace of albumin.

On October 31, 1924, she again entered the hospital with a large quantity of albumin, numerous red blood cells and pus cells. Under general care her condition improved, and she was again discharged on December 14, 1924. She re-entered the hospital in March, 1925, with marked puffiness of the face and swelling of the ankles. The albumin was 4+, with a number of red blood cells and a few pus cells. She was given the same treatment that she had received on previous occasions.

In April, 1925, she showed an albumin of 3+ and an elimination of 760 c.c. in four hours following a 1,500 c.c. intake. The blood urea was 35 milligrams.

DR. TUOHY: This patient, I would say, has been very properly handled. She gives a story of great etiological significance,—the diphtheria, influenza, notably the latter, and later the evidences of kidney involvement. I will tell you later that it is quite necessary to differentiate a nephrosis from a nephritis, not so much from the standpoint of diagnosis but from that of prognosis. The edema is much more apt to be an evidence of nephrosis, if not entirely so, than of nephritis, despite the fact that some cases of nephritis late in their course are apt to develop cardiac failure with vascular edema. The blood in the urine is of paramount significance, and means glomerular inflammation, from which the direst consequences are possible.

It is very important, in addition to tonsillectomy, that these children be studied closely for other sources of infection, including the accessory sinuses. Ordinarily an adult who has nephritis will develop hypertension, with associated cardiac hypertrophy. This may occur very slowly in children.

I think we learn more about the heart through palpation than by any other method. Even through this covering (feeling through the gown) I can feel this young woman's apex in about the normal place. I think she has little hypertrophy. That she is anemic I think is unquestioned.

This is not a pure nephrosis. There is also a nephritis. The blood in the urine and the evidence of the blood urea piling up during an exacerbation bear this out, and the diastolic pressure of 90 is too high for her age. While we do get pure cases of acute nephrosis and pure cases of chronic nephrosis, the pure cases of nephritis are exceedingly rare.

The phenolsulphonaphthalein test, while a great help in some ways, is not as valuable as we wish it was. The modifications of the simple tests of specific gravity are of much more importance, and that I shall outline a good deal more in detail a little later, if time permits.

CASE 3.—(No history was turned in for this patient who was a plethoric woman, aged sixty years, exhibiting nervousness, numbness, tinnitus, and vertigo. She was fearful of "heart trouble" or apoplexy and had seen many doctors. General arteriosclerosis with especial cerebral localization.)

DR. TUOHY: How long do the spells last when you lose consciousness?

PATIENT: About five minutes.

DR. TUOHY: Do you know what is going on?

PATIENT: No, not usually.

DR. TUOHY: When did you have "change of life"?

PATIENT: Fourteen years ago. I started in with my sickness at that time, just as I have it now.

DR. TUOHY: How do you sleep?

PATIENT: Pretty well after midnight.

DR. TUOHY: Have you a family?

PATIENT: Oh yes, seven.

DR. TUOHY: As to the numbness, can you always tell what you are walking on?

PATIENT: Oh, yes.

DR. TUOHY: Do you ever stumble, or burn your hands?

PATIENT: Oh, no; I don't do that.

DR. TUOHY: You never worry do you?

PATIENT: Oh, yes; I do, a lot.

DR. TUOHY: I think we can reassure this woman a good deal, but we cannot change many of her symptoms. We want her to come in and be examined every six months, not always to ask for medicine, but just for friendly advice. She has things inside her arteries that correspond to the change of color in her hair. (Indicating her white hair.) It is what we call the "greying" of the inside of the arteries. This causes a narrowing and a fuzzing of the arterial walls. The basis of the trouble is a cerebral atherosclerosis. She has no heart disease at all. The change of life occurred, and the resultant endocrin imbalance threw her off. There are two types of women; the type that have never had much health and the change of life occurs and they come out as gay as a lark; and the other type that has always been robust and the change of life gives them a multitude of vasomotor disturbances of which "hot flushes" are the most outspoken, but formication and paresthesias are not uncommon.

CASE 4.—DR. E. E. GAGE: This man is sixty-six years of age, a widower. He was brought to the hospital in an ambulance on October 14, 1924. He gave a history of having the usual diseases of childhood, including scarlet fever, tonsillitis, and inflammatory rheumatism. He is a heavy drinker of coffee and uses considerable tobacco.

Upon entrance to the hospital he complained of slight headache. During the two weeks immediately preceding his entrance he had been taking cabinet baths and for two days had been feeling dull and heavy. About noon of the day he entered the hospital he had a severe convulsion. He was unconscious for some time, was quite excitable, disoriented, and very restless. There was no evidence of any paralysis. The headache of which he complained on entrance persisted during the day and night, but the following morning he was more like himself and the headache had apparently disappeared. Urinalysis at that time showed albumin+, sugar, acetone negative. Microscopically many hyalin and granular casts were found. The specific gravity was 1,012; blood of no importance. Blood urea 200 mgs. per 100 c.c. of blood. The P. S. P. test showed 25.5 per cent in one hour and forty-five minutes. Blood pressure on entrance was 175 systolic, 96 diastolic. This pressure has varied from

time to time, ranging as high as 205 systolic, 110 diastolic, a month after his entrance.

His general condition improved, and he was dismissed from the hospital on December 20, 1924. At that time he was eliminating 555 c.c. in four hours following 1,500 c.c. intake. On December 31, 1924, he was re-admitted to the hospital. He felt as well as usual but knew he could have better care at the hospital, and at the same time we were hoping to reduce his weight, which was then about 190 pounds.

The treatment from then on consisted of hot baths, of a temperature of 96 to 98° F., every morning, being rubbed freely while in the bath. This was followed by a pack for thirty minutes, after which he was up and around. On a 1,400 calory diet we reduced his weight considerably, and he felt fine until about one month ago when, unknown to him, he had a cerebral insult. Previous to this he complained of severe headache. On trying to arise from the bed he had some difficulty in controlling himself, and only with the assistance of a nurse was he able to return to bed.

At that time he was considerably disoriented. He complained of severe numbness in his hands, his speech was very thick, and it was with difficulty that he could articulate plainly. His headaches continued for a couple of days, following which they cleared up. Since then he has felt very well and has been taking his baths every day. The blood pressure was around 150 to 160 systolic and from 80 to 85 diastolic. The Wassermann test was negative.

DR. TUOHY: This man appears rather well for his age, sixty-six. As I stand here I note a rather definite pulsation over his precordium. There is a rather vigorous thrust which gives the intimation that there is a larger heart than normal. He is in the age when emphysema is likely to occur. There is no better test for emphysema than the obliteration of the total cardiac dullness. I get a definite area of complete dullness, and you can rest assured that he is not markedly emphysematous.

Do not overlook emphysema. It is an evidence of the loss of the elastic tissue in the body and has a great bearing on longevity and comfort. He looks plethoric. *His appetite is good.* Therefore, he is not developing anemia and is not having signs of gastro-intestinal toxicity, the rather striking signs of primary glomerular shrinkage.

I asked the gentleman here to find for me a true case of chronic glomerular nephritis. Being good clinicians they did not bring one, for they are quite rare. We have in that rapidly fatal malady a symptomatology, including anemia, toxic evidences from the gastro-intestinal standpoint, and a series of signs indicating cerebral irritation, headache, sleeplessness, torpor and gradual chronic uremia. Convulsions, while frequently mentioned, are relatively rare. In any case, the individual who runs into uremia from chronic interstitial nephritis does not come back. He may improve for a few days, but it is a markedly progressive and serious condition. With this picture in the urine, the 250 mgs. urea, and with the blood pressure varying up and down, and, most of all, the cast of countenance this man has, I would put him down as having originally essential hypertension, to which something else is being added, and that something is very definite—an involvement of the kidney, a shrinkage secondary to blood-vessel disease. In other words, this is an "arteriosclerotic nephritis." The man is nearly

twenty years older than the age of the ordinary, true "interstitial nephritis," in which the destruction begins in the glomeruli themselves.

How can we account for the peculiar cerebral occurrences? Some years ago I sent one of my younger associates to see the father of a family who was said to have suffered a stroke. He found him not only stuporous but unable to move the right side of the body. He told them it was a cerebral hemorrhage and that the patient must go to a hospital. After considerable protest he was brought to the hospital, and, much to the doctor's surprise, the man got off the stretcher and walked into the building. What did he have? Either a localized cerebral edema or angiospasm affecting a limited brain area. Edema probably is the cause of all so-called uremic convulsions.

I do not consider this man as being headed toward real, true, chronic glomerular nephritis. It is rather a lack of balance between his blood stream, his arterial walls, and his urinary output, and when they rest him up and limit his intake he comes back. It is a grave condition but not so grave as it might well be. He might have heart block. Casual listening over his heart does not show this, but patients with heart block can faint. The woman we just saw does not have a true lack of consciousness. The question of possible epilepsy can be disposed of. This man deserves the most conscientious care, and while it might be said to be the true picture of interstitial nephritis of the chronic type it misses that entity by a few of the diagnostic criteria I have hastily sketched for you.

CASE 5.—DR. E. E. GAGE: This man is a retired farmer, aged seventy-one years. He has been married for forty-eight years and has five children. He had the usual diseases of childhood, including pneumonia. His habits are very good. He was well until about four years ago, when he had pneumonia. He made a good recovery and has been well since until recently. He complains of pain in the knees and precordium. He has occasional attacks of pain in the heart or over the heart. The heart is not much enlarged, but the *x*-ray shows quite a distinct bulging on the right side of the ascending aorta. The peripheral arteries are well beaded. The eye-grounds show some narrowing of the lumen of the arteries in the fundi. In the right eye one of the veins appears to be partially obliterated, but on the whole the fundi changes are not marked. The blood Wassermann reaction is negative, as is the urine. The wet test shows 570 c.c. in four hours. The P. S. P. test gave 35 per cent. The blood pressure is 140 systolic, 85 diastolic. Our diagnosis is generalized arteriosclerosis, with some secondary kidney contraction and some cardiac change.

DR. TUOHY: This man's eyes are clear. He has no evidences of arcus senilis. He is not the emphysematous type of individual. We speak very glibly of arteriosclerosis but in a vague, indefinite way, not on what we can actually demonstrate, but on what we assume to be present. Study of the eye-grounds, study of the peripheral arteries that we can feel, and study of the roentgenograms, if we take them to show the beautiful tracery of the arteries, give us the true picture, if the arteries show the change. Arteriosclerosis leads to a varied symptomatology, dependent upon the degree, distribution, and kind of blood vessel perversion. We are greatly indebted to Allbutt for his elemental differentiations.

If we begin to think of atherosclerosis, a condition of the intima, a condition which can involve any part of the body, including the cerebral arteries, which occurs in individuals usually over forty, we have the blood vessel background that may well yield angina pectoris. Of course, not all of these patients have angina, but if their signs suggest it always think first of aortic and coronary diseases.

(To patient): Tell us about your pain. When does it occur?

PATIENT: It hurts most when I lie down.

DR. TUOHY: This is not the picture of angina at all. When you are looking for myocardial imbalance there is no better way of discovering it than by looking routinely for the evidences of it. Râles in the base of the lung, "indigestion," bloating, and not infrequently individuals are accused of having gastro-intestinal disease whose myocardium is at fault.

This man is said to have a bulging of the right side of the aorta. One should take such evidence, or get such evidence as that, with great care and great precision. I think the fluoroscope is better for interpreting the base of the aorta than a plate, for if the body turns a little to one side or the other it throws a shadow on the plate that is deceptive. Bulging to the right along the ascending aorta, which is less diffuse than localized, is one of the best evidences we have of syphilitic aortitis.

Granted an individual has such obvious disease in his arteries as this man has, it is well, as in all branches of medicine, to hold your feet to the ground and take into consideration the extreme atheroma and marked beading of the arteries that are easily palpated. Added to that easily demonstrated fact, we have the moderate hypertension. He looks more like the atherosclerotic type. Here we have an ideal situation to bring a test upon his weakened aorta. In these cases it is rather commonly found that there is a diffuse widening of the aorta, not regional and limited, as it is in the early stages of syphilitic aortitis and aneurism. The so-called bruit (Algerian drum) mentioned by the English authors, is one of the best evidences we have of an aortitis but there is no evidence whatever of that in this man's case. I never have forgotten a remark made by Dr. Hugh Cabot in regard to these individuals in connection with a discussion on prostatic obstruction. In no individual over fifty who shows this kind of a blood vessel tendency should we fail to examine the prostate. This has great bearing on their physiologic balance, for the prostate may be a source of further damage to the kidney through holding back the urinary flow. This should always be investigated for it would give us a much better chance to operate on prostatitics with good results, if the local pathology were discovered while their general condition made genito-urinary surgery safer.

CASE 6.—DR. E. E. GAGE: This woman is fifty-four and has the essential characteristics of hypertension. The functional tests as we make them are normal. She has typical hypertension, the etiology of which is essentially unknown. Myocardial fatigue due to overwork gradually comes to these folks.

CASE 7.—This woman is thirty-nine. Her family history is negative, and she gives much the same history and symptoms as the preceding patient. I

cannot go into the history in detail because of lack of time.

CASE 8 AND CASE 9 are both typical cases of Graves' disease, with ligation.

I would like to talk to you a little about goiter because that field has interested me in every way and, of course, from the standpoint of the cardiac findings. All kinds of murmurs may reveal themselves in connection with goiter. The cardiac condition that obtains with Graves' disease is probably more an overwork problem than muscle degeneration. At least this is true in the earlier stages of the disease. You should all read very carefully what is coming out of the Mayo Clinic, as well as out of other centers, such as Boston, with Dr. Leahy and his associates. Be on the lookout for goiter, possibly substernal, when myocardial failure or persistent tachycardia fails to respond to rest and digitalis, and where other evident etiology is not apparent. We have now operated on a series of cases with high metabolic readings and thyroid pathology and bad hearts. Digitalis does not help them. Rest in bed is unavailing. We have operated on some of them even in the presence of edema and decided signs of decompensation, and the results from surgery are good. The old dictum that when one has auricular fibrillation it always persists does not quite hold true. After hyperthyroidism has been checked by surgery it is striking, indeed, to see, occasionally, normal rhythm restored.

Digitalis does not always do what we expect. I have made the mistake, and I fancy some of you may have, of overlooking substernal goiters in patients with rapid and irregular hearts. In order that the lead may not be overworked it is only essential that you watch your step and be most careful in your metabolic readings. The man who would be in medicine a strict specialist, who would be a cardiologist "dyed in the wool," with no interest in other things, would soon go far astray. We must all coördinate our efforts because the patient is seeking health, generally and not segmentally. I have to maintain a keen interest in surgery, not surgery of the thyroid only, but in all fields, for only in that way may I be able to know surgery's possibilities, as well as its limitations. Nowhere is there truth more obvious than in the "team work" engaged in by internists and surgeons in meeting the manifold problems presented by goiter in our decidedly goitrous zones.

I brought some slides along that would carry out a little more of the detail of these cases, but my time will not permit me to go over them. I thank you for your attention.

**THE
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HAIL TO THE NEW YEAR, 1926

THE JOURNAL-LANCET is entering upon a new year with the wish that the past year has been a very satisfactory one to all its readers. There are a few regrets in the passing of 1925 and great hopes for the incoming year of 1926. We hope all of our readers have spent a very happy Christmas time; that they have not forgotten the old spirit which was cultivated in childhood and carried on through adult life. It is a very old custom to have a merry time at Christmas, and the day should see a universal gathering of families whenever possible. Of course, it is unlikely that all family gatherings have been what was anticipated or expected, and doubtless, too, to some (perhaps to a great many) these family reunions are more or less of a bore; but for the majority of right-thinking people they are occasions to be long remembered.

Perhaps the medical profession has suffered financially during the year 1925, but certainly it has been better in a degree than the years of 1924, 1923, and 1922. In common parlance "business has been picking up," that is to say, most of the doctors have been busier during this past year than they were before. That, of course, is not a matter of rejoicing; but from a financial point of view there still is more or less depression. Many banks have failed, and doubtless

many doctors have suffered losses of various sorts; yet they go on philosophically in the development of "the priesthood of medicine." Many men have had untimely and disagreeable calls to make, but, as a rule, the great majority of medical men respond even if they know that their fee is a very uncertain quantity or that their bill may not be paid for a very long time. That is a matter of temporary importance. There are enough banks around the country so that the doctor can borrow money so that he can eat and live in spite of the fact that he has to pay interest on the money. "Money talks to some people but it only whispers to doctors!" The doctor knows that the time is coming, and it is to be hoped that it will come in 1926 when the financial situation will be better, and he hopes that 1926 will be prosperous and better in every way.

When we referred to the priesthood of medicine we had in mind a story that was told in a recent medical pocket quarterly:

"Through the night in a cold, drenching rain walked a widowed mother. Up hill and down dale, through the downpour, she trudged—miles and miles. At last in the physician's house, she said: 'My small child lies dangerously ill!'

"The doctor knew that the widow was too poor to pay. It was midnight and terrifically blustery. The medical man reasoned with himself: 'If I do save the boy, I shall not get paid. And if he lives it will only mean another child to be cared for by the public.' He made the call, however. He was not money mad. He was just a faithful disciple of the priesthood of medicine. Later on that child practically had the world at his feet. He is known to men as Lloyd George!"

All of our institutions that have either near or remote connection with the medical profession doubtless have suffered financial embarrassments, and they can be relieved of an unpleasant situation only by the next meeting of the State Legislatures provided all men work for the common good of public and state institutions and for the advancement of medicine. Doubtless many of the institutions will continue to be short of funds until a real reduction in taxes takes place. Thank heaven, the Congress of the present time is endeavoring to reduce our taxation. We shall probably not get into the real rebound for some time; but we may hope and pray and shout for relief, which will surely come, and that quickly, if we can modify the cost of living.

In the meantime, and looking into the future, the editor of THE JOURNAL-LANCET wishes all of its readers a very prosperous and happy New Year.

THE POSSIBLE ON-COMING EPIDEMICS

It may be a little premature to suggest that we are to be inflicted this winter with epidemics of some kind, notably a probable return of one of the interesting but unfathomable forms of influenza. Those who have been through previous epidemics will remember that many of the subjects have frequent colds and the slightest exposure, to bad air particularly, and to the coughing and expectoration of other patients, and they know that these epidemics may be easily spread. People have become very careless about the protection of themselves and others. They snuffle and snuffle and cough and spit (that is the only word to use) their foul discharges that are loaded with some bacterial infection, and thus large communities are in the path of the infection. This is notably true in small towns, in churches, and in other gatherings that take place in badly ventilated halls and overcrowded homes. There still is a superstition abroad that night air is bad and that people ought not to breathe it. Even in the cities one is frequently confronted with the fact that patients object to having their windows open, and then they wonder why they get sick. People, too, have grown extremely indifferent as to methods of contagion and methods of prevention and their own unfortunate and unseemly habits.

No one has really advanced even a plausible theory as to why we have these influenzal colds; that is, we do not know definitely what sort of germ is responsible. We believe that there are many people that are not immune to infections, however mild in character, and the severity of the disease depends on the individual, whether he has resistance or is not able to overcome his symptoms without taking proper precautions. We know that some kind of germ affects one person in one way, and a different strain of the same germ affects another person differently. The streptococcus is still in the limelight, but its five hundred or more different strains have been difficult to isolate; and the bacteriologists of the present day, in spite of their elaborate researches and experiments, are not sure of their ground. Take, for example, the supposed influenzal bacillus which is only a supposed one—why does one react and why does another fail to respond to this alleged type of infection? It seems to be true that many people have colds and are unable to take care of them. The average working man and the average housewife have no time to be sick unless the attack is more or less virulent; and they are sometimes obliged to go on with

their work in spite of their handicaps, simply waiting for the time when the attack shall be over. In the waiting they find that their attacks are not relieved. They are commonly and frequently exposing themselves to additional attacks by carelessness in clothing, carelessness in breathing bad air, and in mingling with those who are careless in their methods of spreading their own infective diseases.

There have been much comment and a great deal of theorizing on the subject of scarlet fever. We think we know now that it is a form of streptococcus; unfortunately, the method is new and is only in the experimental stage, yet dozens of firms are getting out an antiserum which they think will prevent or cure scarlet fever. As a matter of fact, at the last meeting of scientific men in Chicago it was found, after much discussion, that only one pharmaceutical house had a reliable preparation. Fortunately, these various sera are in the main more or less harmless, that is, the dead bacillus is simply absorbed and eliminated and finds its way, as do many other mild poisons, out of the body. In some instances it is clear that scarlet-fever patients have been benefited by the prompt use of the antiserum, but the best of men are still unconvinced of its certainty. The best of bacteriologists are striving for combinations in time and dosage and in the number of units employed in an effort to prevent scarlet fever. We all recall that the Klebs-Loeffler bacillus, which was discovered many years ago, was given years of experimentation before it was announced as a reliable remedy and before it was put on the market; yet now many doctors are inoculating patients with combined sera of various sorts, sometimes utterly regardless of the reason why or the desirability in individual cases. True, there have been some epidemics cut short by the use of properly prepared serum, but the time has not yet come to broadcast this and to claim a specific remedy.

The question of the return of smallpox must be considered, too. Already cases are being reported in the daily press by the health departments, but so far the number of cases is very small. But an epidemic of smallpox is among the possibilities, and as it is a winter-born disease we should be on the lookout, and vaccination should be begun early. Every cultist or every healer should be warned that if he in any way fails to report the presence of smallpox or advises against vaccination he should be called to order by the department of health. Last year proved that many of the so-called healing artists were ignorant and blind to the fact that epidemic

diseases cannot be overlooked. Yet they openly flouted the methods of medical men to prevent this devastating epidemic. It is impossible to

teach some people, even by a high death rate, that they have no knowledge of the subject in which they give such constant and bad advice.



DR. HERMAN M. JOHNSON, Dawson, Minnesota
PRESIDENT-ELECT MINNESOTA STATE MEDICAL ASSOCIATION
1926

NEWS ITEMS

Dr. E. C. Gaebe has moved from Beulah, N. D., to Zap, N. D.

Dr. J. Regner, who recently began practice in Middle River, has moved to Florida.

A number of cases of trichina, with several deaths, have occurred in Minnesota and North Dakota recently.

Dr. Josephine Tofte has moved from Fisher to Moorhead, where she has offices in the First National Bank Bldg.

Dr. L. J. Bowman, of Ada, has purchased the practice of Dr. L. M. Lowe, of Glyndon, and has moved to the latter place.

The winter meeting of the Sioux Valley Medical Association will be held in Sioux City, Iowa, on January 19th and 20th.

Grand Forks, N. D., raised its first Community

Fund this year, and the amount raised (\$27,000) exceeded the goal set for the city.

Dr. H. P. Radtke, of the Rood Hospital staff, Chisholm, will spend two years in Vienna in surgical work. Dr. Radtke, is a Minnesota graduate, class of '22.

A work entitled "Practical Helps in the Study and Treatment of Head Injuries" has just come from the Gorham Press. It is by Dr. A. M. Hanson, of Faribault.

Dr. Ralph M. Peters, of Minneapolis, and Miss Mathilda Berot, of Glencoe, were married last month at Glencoe and will reside in Minneapolis, the home of Dr. Peters.

Dr. H. Milton Berg, of Fargo, N. D., who was a 1924 graduate of the Medical School of the University of Minnesota, was married last month to Miss Alberta N. Kayser, of Minneapolis.

It is announced that a new hospital building to cost \$350,000 with a capacity of 125 beds will be erected in Aberdeen, S. D., to replace the building of St. Luke's Hospital of that city.

Contracts for the tuberculosis hospital for war veterans at Ft. Snelling (near the Twin Cities) and for additional buildings for the same purpose at Hot Springs, S. D., will soon be let.

The Hospital of the Sisters of Mercy at Kalispel, Mont., was dynamited last month. Much damage was done to the building. The act was that of an insane man who has not been found.

Dr. G. F. Reineke, of New Ulm, received word last month that he had passed the examination required for admission to membership in the American Academy of Ophthalmology and Otolaryngology.

The Mayo Clinic has taken out a disability and life insurance policy of one million dollars on its permanent staff of about 135 members. The policy also provides for pensions for members of the clinic faculty.

The Medical School of the University of Minnesota gave degrees to 72 graduates last week. Of these 39 received the degree of M. D., and 33 received the degree of B. M. Hans Herman Jenson graduated with distinction.

Dr. H. E. Michelson, of Minneapolis, has been elected corresponding member of the French Society of Dermatology and Syphilography. Dr. Michelson is the only member of this Society in the Northwest, and there are very few other members in this country.

The Minnesota State Board of Health and the Minnesota League of Municipalities propose to bring about the appointment of a higher grade of physicians as local health officers; and they have framed a set of model ordinances to be recommended to villages and cities of the state.

The Western Surgical Association, which held its annual meeting in Wichita, Kans., last week, will hold its next annual meeting in Duluth in December, 1926. Dr. Robert C. Coffey, of Portland, Oregon, was elected president; and Dr. Harry P. Ritchie, of St. Paul, was re-elected secretary.

Dr. Hamilton H. Wilcox, of Hot Springs, S. D., died last month at the age of 75. At the time of his death Dr. Wilcox had been surgeon of the State Soldiers' Home at Hot Springs for seventeen years, and before going to South Dakota he practiced surgery in Albert Lea, Minn., for many years.

Dr. Henry C. Leonard, formerly of Minnesota, died last month in Santa Anna, Calif., at the age of 79. Dr. Leonard graduated from Hahnemann Medical College of Philadelphia in the class of '78, and practiced in Fergus Falls, Duluth, and other northern Minnesota cities until 1915, when he went to California.

The Norman County Memorial Hospital at Ada, Minn., was opened just two months after the need of the hospital was presented to the citizens of Ada. A residence was bought and thoroughly equipped for hospital purposes, a registered nurse was employed, and the doors thrown open within two months.

The third quarterly meeting of the Eastern Montana Medical Society met last month at Forsyth, Mont. Vice-president Hayward was in the chair because of the absence of the President, Dr. R. H. Beach, who recently moved from Glendive to Tacoma. Papers were presented by Dr. J. H. Bridenbaugh, of Billings, and Dr. M. C. Pfunder, of Miles City.

At the annual meeting of the Scott-Carver County Medical Society last month, Dr. J. P. Schneider, of Minneapolis, made an address, and papers were presented by Drs. G. R. Malone and H. P. and P. M. Fischer, of the Society. Officers were elected as follows: President, Dr. H. F. Buck, Shakopee; secretary, Dr. H. W. Reiter, Shakopee; treasurer, Dr. H. A. Schneider, Jordan.

The tenth anniversary of the Glen Lake Sanatorium, the tuberculosis hospital of Hennepin County (Minneapolis), will be celebrated on Jan-

uary 4. It opened with 50 patients and now houses over 600 and has a waiting list of 130. Over 50 beds will soon be added. There are over 3,500 known cases of tuberculosis in Minneapolis to-day, many of whom are under the supervision of the out-patient department of Glen Lake.

The annual meeting of the Sixth District Medical Society of North Dakota was held at Bismarck last month, when the following officers were elected for the current year: President, Dr. G. H. Spielman, Mandan; vice-president, Dr. F. F. Griebnow, Bismarck; secretary-treasurer, Dr. R. W. Henderson, Bismarck; delegates,—Drs. C. E. Stackhouse and H. O. Brandes; censors, Drs. C. C. Smith, B. S. Nickerson, and W. L. Diven.

The annual meeting of the Steele County Medical Society was held last month at Owatonna. A talk on pneumonia by Dr. W. C. Roberts, of Owatonna, and its discussion, with election of officers, made up the program of the evening. Officers were elected as follows: President, Dr. T. C. Quigley, Owatonna; vice-president, Dr. R. M. Gamble, Ellendale; secretary, Dr. J. R. McIntyre, Owatonna; treasurer, Dr. F. M. Smersh, Owatonna.

Dr. Edward C. Patton died at Pasadena, Calif., last month at the age of 67. Dr. Patton graduated from the Miami Medical College of Cincinnati in the class of '80, and soon began practice with his father, Dr. George R. Patton, at Lake City, Minn. Later he practiced in Minneapolis and then moved to Pasadena. Dr. George R. Patton was a pioneer physician in Minnesota and was a frequent contributor to *THE LANCET* in the early days.

The Yankton District Medical Society of South Dakota met at Yankton last month with a worthwhile program, which was a symposium on physiotherapy, electrotherapy, diathermy, ultraviolet rays, etc., and the theory and underlying principles and practice of these agencies. The question was asked in the invitation to the meeting: Are these methods of treatment, now running strong with the cults, worth the attention of reputable physicians? Such subjects ought to be discussed in medical meetings.

The Sioux Falls (S. D.) District Medical Society met in Sioux Falls last month. Dr. Hugh T. Jones, of the Mayo Clinic, who was the guest of the Society, presented a paper on "Office Orthopedics." Officers for 1926 were elected as follows: President, Dr. W. P. Roberts, Sioux Falls; vice-president, Dr. L. T. Park, Canton; secretary-treasurer, Dr. D. A. Gregory, Sioux

Falls; member of board of censors, Dr. L. G. Hill, Sioux Falls; delegates,—Drs. P. R. Billingsley, P. E. Brandon, and L. J. Pankow.

The Miller Hospital and Clinic of Miller, S. D., established and built up during the past five years by Drs. Port McWhorter and D. O. Wheelock, have been sold to Dr. D. A. Gregory, of Sioux Falls, S. D., and Dr. J. C. Hagin, of Crooks, S. D. The four men who are parties to this change are prominent in the medical profession of South Dakota, and the change means much to the clientele of each of the principals, but the public will not be losers, for the new men in the Hospital and Clinic will maintain the high standards established by Drs. McWhorter and Wheelock, and the latter will specialize in new lines and in other fields.

The Central Minnesota District and the Kandiyohi-Swift Medical Societies met at Willmar last month on the same day. Among the visitors were Dr. Hilding Berglund, new Chief of the department of Medicine of the University of Minnesota, and Dr. H. M. Johnson, president-elect of the Minnesota State Medical Association. Both spoke at the joint meeting and banquet in the evening. The Central District Society elected the following officers: President, Dr. J. R. Sturre, Watkins; vice-president, Dr. L. W. Anderson, Atwater; secretary-treasurer, Dr. W. P. Robertson, Litchfield. The Kandiyohi-Swift Society elected the following: President, Dr. H. S. French, New London; vice-president, Dr. L. D. Anderson, Atwater; secretary, Dr. C. L. Scofield, Benson.

Dr. W. L. Burnap, Ex-President of the Minnesota State Medical Association, was in Cleveland, recently attending a meeting of the Radiological Society of North America. In the evening he went out after the session meeting for a little exercise and was struck from behind by a "blind man" driving a cab. He says a "blind man" because the driver claimed he saw no one; but in order to get him he had to cut the corner of the street. Certainly there was something wrong with the driver's eyesight or his brain-sight. Dr. Burnap suffered a bad laceration of the ligaments of the left knee joint. He said that the impact temporarily dazed him and he was taken by cab and hurried to Lakeside Hospital. In describing the experience afterward he said: "I know what happened, but I am like the darkey, who, when asked if he had counsel, said he did not want any lawyers mixed up in his affairs but would like two good witnesses." We sincerely hope that he got them.

Dr. J. F. D. Cook, of Langford, S. D., who is the Superintendent of the State Board of Health and Secretary-Treasurer of the South Dakota State Medical Association, is home from an extended trip in the interests of the Board of Health. He went to St. Louis to attend the Conference of the American Public Health Association. From St. Louis the International Health Board gave him a trip to visit the State health centers at Nashville, Tennessee; Montgomery, Alabama; Atlanta, Georgia; Columbia, South Carolina; Raleigh, North Carolina; and Washington, D. C. Dr. Cook got a new vision of public-health work and public-health workers, and saw much of interest and value to him and the State of South Dakota. He was pleased to be able to report that his own State has in operation three county and city health units under whole-time health officers. Dr. Cook's work is full of promise for South Dakota, through both its health department and the State Medical Association.

MISCELLANY

THE RETIREMENT OF MR. FREDERICK HEIN

For over a quarter of a century the physicians and surgeons of the Northwest have known Mr. Frederick Hein, of Noyes Bros. & Cutler, Inc., of St. Paul, who, in announcing Mr. Hein's resignation, pay him a very handsome compliment for his many years of loyal service to that house.

Mr. Hein was a medical college student in the East when Mr. D. R. Noyes prevailed upon him to come to the Northwest and take hold of the "Physician and Hospital Supply Department" of Noyes Bros. & Cutler, which was then a very small affair for there was not a multiplicity of surgical instruments; there were but few, if any, x-ray and physiotherapy appliances; there were practically no clinical laboratories; and the hospitals needed but little. To-day all is changed, and the departments above named have grown into very large lines of business. Mr. Hein also grew, and he became a real authority on all things pertaining to these extensive lines, and frequently visited the American and European markets for the best they had to offer physicians and surgeons in East or West; and thus Mr. Hein became acquainted with, and the friend of, Northwestern medical men.

THE JOURNAL-LANCET's good wishes are extended to Mr. Hein, and we trust his future activities will still enable him to serve the profession. His training would make him an invaluable man in a sanatorium, hospital, or large clinic where integrity, business experience, and a knowledge of both laymen and physicians would be useful; and such work doubtless would be congenial to him.

THE NEW MIDWAY HOSPITAL



The New Midway Hospital of St. Paul

The new Midway Hospital, being erected in St. Paul in the Midway district of the Twin Cities, by the Northwestern Baptist Hospital Association, will match any other hospital in America in its modernness as a medical institution. Every point of modern hospital building has been incorporated in the plan. Plans for the building were made by Lambert Bassindale, assisted by Harry W. Jones as advisory architect, and under the supervision of Dr. Robert Earl, of St. Paul, chairman of the building committee.

The hospital is to be Gothic in line, of red brick trimmed in Bedford stone. It will have four floors, surmounted by a tower. The plan calls for the widening of Aldine Street, which is to be the principal approach from the avenue, and for an island parkway within the street for flowers and shrubs. The building is to be set with its front at Shields Avenue, having its ambulance and service entrance also from this street. The vista between the hospital and University Avenue, one block distant, is to be completely parked, provision being made to leave as many of the present trees as is possible.

When completed the hospital will have three main buildings, the hospital proper, nurses' home, and a building to be utilized for hospital employees. These buildings will be located on the stretch of land between University and St. Anthony Avenues. Another plaza will be created in the rear of the hospital proper to be used as a convalescent place in the out-of-doors for patients.

The layout of the structure is to be in the shape of a Y. At the head of the Y, or the apex, all of the administration facilities will be assembled. Here will be the general offices, passenger and ambulance elevators, ambulance entrance, the entry examination room and all other features connected with the administration of the hospital.

The hospital will be arranged so that ambulances may drive right into the lower floor of this unit at a point where the ambulance elevators will serve all parts of the building as well as be within a moment's distance from the administration office of the hospital.

Located at the apex on each of the floors a supervision station has been provided so that the supervising nurse on duty may have a view of

both of the wings which extend from the apex and will have constant control of each of the entire floors.

The first unit, which will at present house the nurses and the employes, will be a 110-bed unit. This ultimately will be increased to 250. All of the service features which are to be united are to be large enough to care for all of the buildings of the group when finally completed. The heating plant and laundry are to be an integral part of this first main building and will be strictly modern.

The operating-rooms are to be located on the fourth floor of the building, illuminated by skylights, and will incorporate the finest of equipment and medical devices. They are to be complete together with physicians' and nurses' dressing rooms, sterilizing rooms with laboratories, surgical dressing rooms, X-ray and plate making departments, machine room and other operative facilities readily accessible. The entire north wing of the fourth floor has been departmentalized as the operating section.

The kitchens will, to a layman, have the appearance of being as imposing in their layouts as the operating department. Scullery departments will likewise be provided as an adjunct to the kitchens, making possible the elimination from the main kitchens and bakery of the greater part of the debris incidental to cooking. Dish-washing room, kitchen storage, vegetable cellar and other such departments have likewise been detached from the main kitchens to make the main kitchen and bakery as free as possible. The serving kitchen with its steam tables and dumb waiters to all the floors is also a detached unit. The first floor for the most part, together with housing the general officers, provides for one and two bedrooms, while the second floor provides for the small wards which the hospital will incorporate.

The third floor is to be utilized as the maternity department, complete with its delivery room, sterilizing room, nursery, nurses' room, and a separate service department. Sound-proofing of the building has been a real problem for the architects, as the laundry and the engine department are to be located as an integral part of the edifice. This not only called for sound-proofing of the entire building, but the anchoring of all the machinery on "island floors" to eliminate all the chances for vibration from these machines being transmitted to other portions of the building.

The corridors of the building are to be floored with sound-proof linoleum and cork, and will be trimmed in marble.

The hospital, built by the business men of the Twin Cities, as well as the Baptists of the Northwest, will serve as a unit for the northwestern states and as a community hospital in the Midway district. Work on the building, which was started July 1, is to be completed June 1, 1926.

German-Speaking Physician and Surgeon Wants Work

Has had four years hospital training, chiefly in surgery (general and gynecological) in Vienna; four years leading surgeon of a miners' hospital; surgeon during the World War; does also rhinological surgery. Best of references. Address 340, care of this office.

Laboratory Technician Wanted

In a Minnesota City of 6,000. Must be able to use diathermic and X-ray machines. Address 336, care of this office.

X-Ray Generator for Sale

A Victor-Wantz X-Ray Generator, 10-inch spark gap for 220 direct current, can be bought at a bargain. Address 325, care of this office.

Office Space Wanted in Minneapolis

An eye and ear specialist wants to rent office and share reception room with a general practitioner in Minneapolis. Address 322, care of this office.

Office Room in Fargo, N. D. for Rent

Office room with physician and dentist with laboratory privileges is offered at very reasonable rental in Fargo, N. D. Address 332, care of this office.

Drug Stock for Sale

Complete prescription stock and equipment, including shelf bottles and case, if desired. All live stock. Inventory on request. A snap. Address 329, care of this office.

Fine Minneapolis Office to Sublet Mornings

I will sublet my two offices and reception room to the right party mornings. Offices are completely equipped. Telephone and attendants are included. Address 331, care of this office.

Technician Wants Laboratory Work Mornings in Minneapolis

Has had four years experience in large hospital and large clinic, and is now engaged afternoons in Minneapolis. Desires work in forenoons in this city. Address 335, care of this office.

Minneapolis Office for Rent

A fine location for a new physician at 3734 Chicago Avenue. Office in a new modern building; waiting-room in connection with dentist. Call at above address or phone Locust 4386 or Locust 3759.

North Dakota Practice for Sale

Has paid on an average for the past nine years \$8,500 annually without surgery. Good fees; large territory; on a transcontinental railroad and state highway. Am joining a group is reason for leaving. Address 330, care of this office.

Young Dentist Wanted

First-class young dentist to take charge of such work in an active well-established clinic in northwest city of about 8,000. No investment necessary, with unlimited possibilities. Must have a clean, moral character and willing to work and co-operate in clinic practice. Address 334, care of this office.

Fine Minneapolis Location for a Physician in Minneapolis

Office for rent in one of the best locations in the city in South Minneapolis. For particulars write or see M. T. Lundblad, 1523 East Lake Street. Telephone Dykewater 0243.

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ECZEMATOID RINGWORM (EPIDERMOPHYTOSIS) OF THE SKIN*

By JOHN BUTLER, M.D.

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MINNEAPOLIS, MINNESOTA

Eczematoid ringworm (epidermophytosis) is a common fungus infection of the skin not generally recognized as such. This affection has been named "epidermophytosis," and it may be differentiated morphologically and culturally, though not always clinically, from the ordinary ringworm (trichophytosis) affections or dermatoses of an eczematous nature. The essential clinical difference between the epidermophytosis and the trichophytosis is that the epidermophytosis involves the glabrous skin only, never attacking the hair shafts or follicles and tend to run a chronic course with seasonable intermissions of comparative quiescence, whereas the trichophytosis attacks the hair shafts and follicles along with the glabrous skin.

These eczematoid ringworm infections are localized, in the order of frequency, in the feet, hands, crural region, and axilla; other parts of the body, such as the nails, scalp, lower abdomen, perineal, sacral, and inframammary regions, are occasionally involved.

The affection in any of these regions may show a variety of clinical aspects. Thus involvement of the feet and hands may be clinically indistinguishable at times from the so-called dyshidrosis, or a vesicular, intertriginous, or even a tylotic eczema. The affection in the crural region and

axillae agrees largely with our clinical conception of a scaling eczema or a trichophytosis of the body surfaces. Epidermophytosis has been in the past, and is at the present time, generally considered by many physicians as a true eczema, notwithstanding the fact that in 1869 one type of it, namely, eczema marginatum, was regarded by Hebra, of the Vienna School, as a fungus infection.

In 1910 Whitfield classified the disease into three types:

1. An acute vesicobullous of sudden onset, with all the characteristics of a vesicular eczema or dyshidrosis.

2. Chronic intertriginous of the toes, secondary to acute vesicular type, with whitened, sodden mass of epithelium between the toes.

3. Chronic hyperkeratotic, with enormous and irregular masses of overgrown horny layer, usually on the feet, but may involve the entire plantar surface. Scattered vesicles and pustules may be found.

C. J. White added to Whitfield's classification three types, as follows:

4. Macular in the crural and axillary region.
5. Papular (lichenified) in the same region.
6. Nail involvement.

I can best demonstrate these different types by showing you some lantern slides.

The lesions on the foot consist of deep-seated

*Address before the thirty-eighth annual meeting of the North Dakota State Medical Association held at Fargo, N. D., May 18 and 19, 1925.

vesicles. The vesicles are formed in the deeper layers of the epidermis, show a tendency to grouping, and in practically all cases are to be found in the interspace between the fourth and fifth toes. Owing to the close apposition of the fourth and fifth toes, plus the friction and constant moisture, the roof of the vesicle quickly macerates, showing a whitened sodden epidermis that may be detached (Fig. 1.) showing a dark red, dry base. On the arch of the foot the vesicles are well preserved; they are deep-seated and tend to group occasionally, becoming confluent. Fig 2.) The vesicles here have a sago-like appearance and often show a central bluish color; their contents are resorbed when they are situated under a dense corneal layer, and they tend to rupture where the corneal layer is thinned. In either event there is a desiccation of the roof of the vesicle. On the ball and heel of the foot, where the corneal layer is exceptionally thick, the underlying vesicles cannot be discerned, and the constant irritation of continuous vesication with the intermittent pressure applied to the part produces a hyperkeratosis (callositas) of variable degree. (Fig. 3.)

sions show the polymorphism of an eczema, exhibiting at times erythema, vesicles, weeping, and infiltration. (Fig. 4.) Itching is not as constant and severe as in true eczema. The affected areas in epidermophyton affections are, however, more circumscribed and the sides of the fingers are chosen. The erythema is less pronounced, and the vesicles are larger and persist longer before erupting than in true eczema. The papule and pustule, which are generally a part of the picture of acute eczema, are usually wanting in the fungus infection of the hands. The chronic, thickened palmar fungus infection resembles a chronic palmar eczema or a palmar syphilide in many respects, but does not tend to involve the dorsal surfaces. Occasionally we find an acute, deep-seated, vesicular eruption on the palmar surface. (Fig. 5.) Sometimes the vesicles group and coalesce, showing bullous lesions without objective inflammatory signs. In such cases the vesicle contents are absorbed, leaving a dark-brown, pigmented spot that slowly undergoes desiccation.

The next site of frequency of the disease is the crural region, then probably the axillæ. In both of these regions the affection is very similar, al-

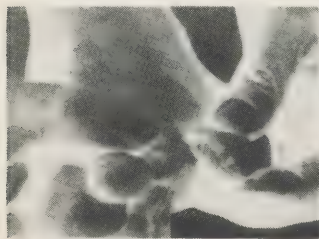


Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

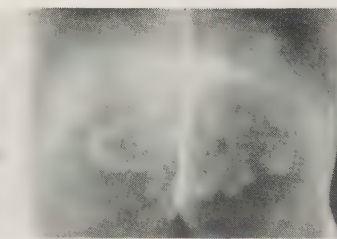


Fig. 6

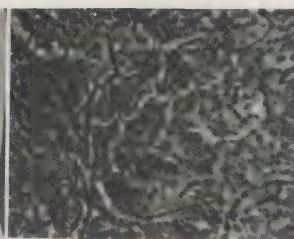


Fig. 7

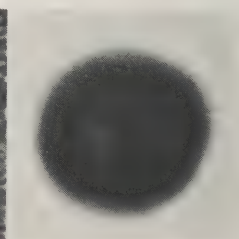


Fig. 8

Fig. 1. Showing macerated and intertogenous condition between toes.

Fig. 2. Showing deep-seated vesicles on the arch of the foot.

Fig. 3. Chronic hyperkeratotic condition on the ball of the foot.

Fig. 4. Erythema, vesicles, weeping, and infiltration.

Infections of the hands are perhaps next in frequency of occurrence. In my experience many of these cases are indistinguishable from acute, subacute, or chronic eczemas, and microscopic finding of the fungi is often necessary to determine the correct diagnosis. The hand le-

Fig. 5. Acute deep-seated vesicular eruption on palmar surface.

Fig. 6. Showing fungus infection of the glabrous skin.

Fig. 7. Microscopic picture of fungi from tissue scrapings.

Fig. 8. Six-day growth of organism on glucous agar media.

though involvement of the axillæ is much more rare. As before mentioned, Hebra first described the disease in the crural region, giving it the name of "eczema marginatum." Later, when its fungus nature was clearly established, the name was changed to "tinea cruris" or "tinea trichophytosis cruris," as it was assumed that the causa-

tive fungus was of the megalosporon variety of the trichophyton group. So the disease in the crural region is erroneously designated as a "trichophyton" instead of an epidermophyton infection in most of the modern text-books of dermatology.

The implantation of the fungus in the crural and axillary regions, as in the toe interspaces, is rendered easy by the heat, moisture, and friction in the crural and axillary folds, causing an intertriginous erythema. The primary lesion may be a macule, papule, or vesicle, usually situated on the left crural region. The lesion, or lesions, whether macular or papular, spread peripherally, forming rings or sectors, varying from the size of a penny to that of the palm or larger. They may extend to the other thigh, to the pubes, and lower abdomen, or follow the perineum, involving the intergluteal folds to the sacral region. The borders of the rings are not raised if the condition is macular; if it is papular or vesicular the borders are clearly raised and may appear irregular or clean-cut. These borders are made up of papules or ruptured vesicles, showing brownish crusts and in such cases are decidedly inflammatory, the parts within the rings varying in color from a yellow or yellowish-red to dark-brown. The disease may spread beyond the mentioned localities, although it is usually limited to the region between the scrotum and thigh.

The affection of course, is aggravated in hot or tropical climates, which is due to the epidermophyton being complicated by the common pus infections. In tropical climates this condition is known as the "dhobie itch." While this description applies to the ordinary case, we may have involvement amounting to lichenification, in which the affected areas show only flat-topped, angular papules, comparable to a lichen simplex chronicus. This condition may result from scratching the areas or perhaps from a too intensive treatment with irritating drugs.

On the abdominal and sacral regions the affection simulates a dry seborrhoic dermatitis or, more properly, a pityriasis corporis; the areas are sharply margined, decidedly erythematous, and covered with a thin, easily detached papery scale. (Fig. 6.)

The inframammary region is often involved and here it is generally regarded as an intertriginous eczema. The affection here simulates the crural and axillary condition. The eruption may be macular, macerated, or papular (lichenified), and is often complicated by pyogenic infection.

Diagnosis of nail infections with the epidermophyton is difficult. In two cases under observa-

tion, I found no appreciable change in the nail bed, though the organism was present. The nail plate was normal, except the distal end which was very friable, laterally split, and tending to break off. Inflammatory symptoms were absent in both cases. There are no recorded cases of hair involvement by the fungus.

The fungus of epidermophytosis differs from other ringworm fungi in that it does not affect the hairs nor produce suppuration. Moreover, in fungi which invade the hair, spores are abundant, whereas in the epidermophyton infections they are rarely observed in the tissues removed for examination—at least, this has been my experience.

In the tissue scrapings from lesions produced by the parasite the fungus appears under the microscope as a network of mycelial threads. The threads are of uniform thickness and highly refractile. (Fig. 7.) Branching takes place at right angles, and under high power objective distinct septa are observed with segments of varying lengths, in places short and bead-like, in others, longer. In the squames or tissue scrapings of the intertriginous type in particular the mycelial threads are short and very tortuous. No spores have been observed in the epidemis by us, although there can be no doubt of their existence during the quiescent period of the disease, and by virtue of this characteristic, the life of the organism is preserved until a more favorable environment obtains. (Fig. 8.)

In searching for the fungus in tissue scrapings, it is advisable to select the specimen from the more active parts. The roof of a vesicle is excised by a Graefe knife and placed upon the slide, inverted, and immersed in a solution of potassium hydroxid, and covered with a coverslip. (Whitfield.) The slide may be heated gently over the flame, but usually this is not necessary. Before examining the specimen, the coverslip should be firmly pressed down to insure a thin film. The scales from the reddened base under the macerated tissue between the toes may be examined in the same manner.

The fact that heat and moisture are necessary to an exacerbation of the disease makes it more active, if not more prevalent, in the spring months from May to July. From July to November it is much less active, and many severe cases are quiescent during this period. Whether this is due to immunologic conditions or to the desquaming process occasioned by irritant fungi I do not know. With the necessary change to heavy clothing or woollens in November and December the infection is again in evidence with pronounced

objective and oftentimes subjective symptoms. Here, again, heat and moisture become a factor and either light up the latent infection or render conditions more favorable for the growth of the fungus. From December to April it is again quiescent in the great majority of patients.

The treatment of this disease is difficult irrespective of duration or location, and the treatment must be symptomatic, like that of any acute or chronic inflammation of an eczematous nature. If strong irritants are applied in the acute stage, the patient will likely be rendered very uncomfortable or bedridden. On the other hand, if mild applications are applied in the chronic, latent or hyperkeratotic stage little or no benefit will be obtained. The principle of correct or curative treatment consists in desquamating the diseased epidermis, keeping the regenerated epidermis fungus-free, and at the same time keeping the patient fit for duty without too much discomfort.

Bearing in mind that this disease is occasioned by a fungus situated in the epidermal tissues and acting like any foreign body therein, it is plain to all of us that we must keratolize or soften and remove this diseased tissue. If the disease is localized to the feet and acute enough to cause discomfort, a diachylon ointment may be applied. This will further soften the thickened epidermis without irritating the parts. After two days of this application the diseased epidermis, whether interdigital or vesicular, may be removed by soap and water and rubbing with a rough towel. Please bear in mind that the diachylon ointment is in no way a parasiticide; its use is solely for facilitating the removal of the dead epidermis. This being accomplished, the reddened base, now freed from its sodden covering, may be painted with a 20 per cent silver nitrate solution or a 10 per cent tincture of iodine in alcohol. The silver nitrate induces a further shedding of the viable epidermis which contains many fungi. The 10 per cent iodine solution effects the same changes and should have a better parasitocidal effect. I personally prefer the silver nitrate solution, as its penetrating effect, causing a silver albuminate, is uniform, and it will not cause a dermatitis as readily as the iodine solution. After the silver nitrate or iodine application, we may use to advantage the well-known Whitfield ointment, which is made up as follows:

Salicylic acid.....	2.0
Benzoic acid.....	4.0
Vaseline or benzoinated lard.....	30.0

If the condition is not too acute the skin will tolerate this ointment; if too acute, the vaselin or lard base must be increased. This ointment has a keratolizing effect by virtue of the large amount of salicylic acid and a parasitocidal effect due to the benzoic acid. After applying the ointment for three days, the excess should be wiped off, the skin cleansed with benzine, and the silver nitrate reapplied and followed by another three days' treatment with Whitfield's ointment. The above mentioned treatment should be continued until a healthy fungus-free epidermis is formed. Then, to prevent recurrence, a 15 per cent solution of sodium hyposulphate or a 1-5,000 permanganate of potash should be used as a daily foot bath for the following two months. Needless to say, all wearing apparel directly touching the diseased parts, as well as the shoes, should be sterilized.

The above outlined treatment applies only to the vesicular and intertriginous types of the disease. The hyperkeratotic type, affecting the plantar and palmar surfaces, requires additional measures, and, in order to facilitate a cure, the hyperkeratotic epidermis should be pared as thin as possible and a 40 per cent salicylic acid plaster continuously applied and changed every third day. The dissolving or keratolytic effect of the plaster will thin the thickened epidermis to a normal thickness in from two to eight weeks when the above outlined treatment may be applied to the parts. Some writers recommend a 2 to 10 per cent ointment of pyrogallol acid or chrysorobin in place of the Whitfield ointment.

In the treatment of the affection of the crural, axillary, inframammary, and glabrous skin, the above-outlined treatment, except the use of the salicylic acid plaster, will be found helpful and often curative. Ordinarily the Whitfield ointment should be weaker, and care should be taken not to overirritate the parts. As earlier mentioned, the crural and axillary regions occasionally take on a thickened, lichenified condition if overirritated. This condition is, I believe, best combated by the daily application of pure crude coal tar, as suggested by C. J. White, or his C.A.T. mixture, which is as follows:

Collodion
Acetone
Crude coal tar, aa, 20.0

To be painted on the affected patches daily for four days, allowed to peel, and repainted.

PEDIATRIC CASES: A CLINIC*

By H. F. HELMHOLZ, M.D.

Chief of Section on Pediatrics, Mayo Clinic

ROCHESTER, MINNESOTA

I wish to thank the local committee, particularly Dr. Donahoe, for the excellent work in furnishing the material to be presented this afternoon.

CASE 1.—This little girl is three years old. She was well until February, 1925. At that time she had mild scarlet fever complicated by otitis media in both ears. Since then she has had an irregular temperature and a loose cough. At present her leucocyte count is 12,500. The cough is hollow and productive and somewhat suggestive of whooping cough. It has been impossible to obtain any sputum as she swallows it as soon as it is coughed up.

Examination of the chest shows flatness over the left lower lobe, extending upward into the axilla. Just outside the heart area there is also definite dullness. The heart is in normal position. Percussion does not reveal any pushing over of the heart to the right. On the right there is dullness with high-pitched, tubular breathing, and over the entire right side there are loud, harsh râles. Over the left side in the area of dullness there is also high-pitched, tubular breathing. This is not uniform, and in certain areas has a definite amphoric character. Posteriorly, the tubular breathing is not of uniform intensity, but in some areas has an amphoric character, while in others it is more distant. The rest of the examination, except for the ears, is negative. The Roentgen ray shows an intense shadow over the left lower lobe. On percussion we can definitely outline the left upper lobe with the consolidation over the entire left lower lobe.

Of very great interest is the clubbing of the fingers. Her hands definitely show early evidence of clubbing, with very intense cyanosis.

There was no definite onset of trouble, nor acute complication but a gradual development following the scarlet fever. A lesion, as sharply defined as this, limited to the left lower lobe, makes us think, first, of unresolved pneumonia. Furthermore, there is the possibility of pneumonia of the left lower lobe complicated by encapsulated empyema. This condition was partially excluded by the fact that the child was tapped and no pus obtained. This, on the other hand, is not of much importance as only one small needle was used and only one puncture made. Furthermore, there may be a large amount of fibrin in the exudate so that it would be impossible to get much, if any, fluid. We must consider the possibility of a subacute bronchopneumonia resulting in numerous areas of consolidation over the left lower lobe. The high-pitched, tubular breathing, with an amphoric tendency is suggestive or a chronic bronchopneumonia, which is tending to break down and form bronchiectatic cavities.

The acute clubbing of the fingers in particular is evidence of this. On the right side there is a definite area of dullness, with high-pitched, tubular breath-

ing, râles scattered over the entire lobe, and diffuse bronchitis.

There is no question but that the left side should be further needed to be absolutely sure that there is no effusion in the left lower chest. The greatest number of mistakes in diagnosing pneumonia in a child is due to the fact that fluid under any pressure in the chest cavity gives the exact findings of lobar pneumonia. In spite of the differences in the character of the breathing here we cannot absolutely exclude an effusion in that side. There is not much fluid because there is no displacement of the heart. The persistence of the condition since February is evidence that the disease has become chronic, that it has not been progressive, and in all probability is not doing any great harm. There is, however, definite consolidation with breaking down of the parenchyma of the lung, a condition extremely difficult to treat and with a poor prognosis.

The most important therapeutic measure in this case is postural drainage. Two or three times a day the child should be stretched forward out of bed onto the floor so as to allow the thick, mucopurulent material to run out. Inhalations are of assistance in that they stimulate the secretion of mucus and wash out the cavities. It is very important that further infections be avoided as much as possible. In the Northwest climate it is very difficult to prevent a child from having recurring infections of the upper respiratory tract. Bronchitis is frequently complicated by involvement of the accessory sinuses. Clearing up the sinus infection very often results in improvement of the lung condition. General hygienic measures are of importance.

It is of great importance that the specific antitoxin be used in scarlet fever in the first few days. After that is of practically no value. In the first twenty-four hours its effect is to be compared to the benefits of serum treatment in diphtheria. It has a definite effect upon the acute toxic symptoms. In the cases treated so far, it seems to have definitely lessened the acute complications. Since complications may develop in either severe or mild cases, the antitoxin is indicated in all cases.

This case is of unusual interest in that there is a complication of the lungs following scarlet fever. It is a question whether this child did not have chronic bronchitis before the onset of the scarlet fever.

CASE 2.—This patient, nineteen months old, was breast-fed for three months and then put on a modified milk mixture. He was not seen by a physician for a number of months and did not receive any orange juice, cod liver oil, or vegetables. He now weighs seventeen pounds and is rather poorly developed and nourished. Rickets is the important finding. The outstanding feature has been a very pronounced anemia. At the time of the first examination there was a loud, blowing, systolic murmur, heard over the entire heart area. In the roentgenogram there is a very markedly widened heart shadow, in a measure due to abdominal distension. In view of the excessive enlargement it

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can be definitely stated that we are dealing with hypertrophy and dilatation of the heart. A recent roentgenogram shows a similar heart area. The murmur is still present but lessened in intensity.

A heart murmur during the first year of life is usually a functional murmur due to anemia or some acute illness, or is due to a congenital malformation of the heart. The functional murmurs are usually heard loudest at the base, although they may be maximal at the apex. They are generally a part of the first sound, follow it closely, and are best described by a fraying out of the first sound. Acquired endocarditis is extremely rare during the first two years of life, although it has been seen during the first six months. The murmur of mitral insufficiency is usually sharply defined as to beginning and ending, following the first sound after a short interval and of a soft blowing character. The murmur of the congenital heart lesion is usually very rough, machine-like in character, and not well defined as to systole or diastole. In stenosis of the pulmonary valve the murmur is generally sharply defined, present in maximal intensity over the pulmonary area, and often accompanied by a definite thrill that can be felt in this area.

The difficulty in recognizing these congenital heart lesions is not when they are present in typical text-book form, but there may be a murmur over the mitral area, resembling an acquired form. The fact that we still have a slightly enlarged heart shadow and a murmur that has been of greater intensity than it is at present speaks for the presence of a congenital lesion. If it were not for the very definite enlargement of the heart, the other physical findings would not suggest congenital heart lesion. The murmur could be easily accounted for on the basis of the anemia. I know of nothing so likely to give a loud murmur of rasping intensity in this region as is anemia, but I feel that a congenital heart lesion is the most probable explanation here.

This child, placed in good hygienic surroundings, and given cod liver oil and a transfusion, has shown marked improvement. Transfusion is of great value in cases of anemia of infancy. It is, of course, best if the blood can be given intravenously, but when this is impossible the giving of 20 c.c. of normal blood intramuscularly, at weekly intervals, is of great benefit.

The patient still has definite evidence of rickets, but the condition has improved, and inasmuch as he can be out of doors most of the time for the next six months, he has every chance to increase his resistance. Light treatment is an important substitute for sunlight in the winter months. There can be no doubt that artificially fed children show at least a moderate degree of rickets during the winter months, which can be demonstrated by Roentgen-ray examination. In this temperate zone there is a definite preventive problem. We know that sunlight is practically a specific; cod liver oil is a specific. The quartz lamp is an excellent substitute for the lack of sunlight in winter. Cod liver oil should be given in one-half teaspoonful doses twice a day to children under six months and in teaspoonful doses twice a day to older children as a preventive measure. In rachitic children exposures to the quartz lamp will be beneficial.

CASE 3.—This child was the third in the family. The delivery was normal. He was a strong, healthy,

breast-fed baby. He was brought to the Clinic at the age of two months because of acute gastrointestinal disturbance, with marked distension of the abdomen and caput medusæ. With subsidence of the distension, the spleen was found to be enlarged extending down to the umbilicus.

The child has developed surprisingly well. He has been out of doors most of the time and has a definite sunburn which has resulted in a slight eczema. His nutritional condition is fair. The abdomen is somewhat prominent; the spleen slightly enlarged, and the liver slightly larger and harder than normal. A caput medusæ is visible on the abdomen.

Since two months of age he has had some gastrointestinal disturbance but not of any severity. He has never been jaundiced and has never had any ascites. The general physical condition, except for the protuberant abdomen, is excellent.

What are we dealing with? There is every evidence of portal obstruction as shown by the definite attempt at compensatory circulation to the umbilicus. The usual causes of enlarged spleen can almost all be ruled out by the history alone. A syphilitic liver and spleen are excluded from the diagnosis by the negative Wassermann reaction on the mother and child. The pseudoleukemic enlargement of the spleen seen in infants usually develops during the second half of the first year of life. The blood does not show any of the changes of a leukemia or a pseudoleukemia. We never find splenic anemia at this time. Gaucher's disease, which has been found as early as the first year, is progressive, which this has not been. Banti's disease usually occurs considerably later than this. Hemorrhagic jaundice is ruled out by the fact that the child is not jaundiced.

The most striking, outstanding feature of the case is the caput medusæ, the attempt at compensatory circulation. The explanation of this portal stasis in all probability accounts also for the enlargement of the spleen. An infection of some kind in utero, with partial thrombosis, may explain the condition. I do not believe, however, that an infection which would produce thrombosis at birth would give this picture. In all likelihood the child would have died if thrombosis had occurred.

It has been the experience of a good many observers that enlargement of the spleen, whatever the cause, tends to be followed by cirrhotic changes in the liver, particularly with the so-called splenic anemia, in which these changes do not develop if the spleen is removed early. If the spleen is allowed to remain, cirrhosis develops. Are the changes in the liver in this patient due to the original cause or are they due to some toxemia produced by the enlarged spleen?

In one patient who was suffering from cirrhosis of the liver the spleen was not removed. If splenectomy had been performed when the child was first seen, his chances of recovery would have been much better. Indication for splenectomy does not seem immediate in this case, but the child should be observed every three months. The size, consistency, and edge of the liver should be determined, and any jaundice would be a very definite indication for splenectomy.

The original cause of the portal obstruction must be left open, but I do not believe that in this case we are dealing with any of the usual changes in the spleen or liver.

CASE 4.—This little boy is four years old. Delivery is said to have been normal. He was seen for the first time at the age of four weeks. Up to that time his mother said he had had a good deal of rattling in his throat, at times much exaggerated and with "choking spells" associated with cyanosis. When seen by the physician at four weeks, he had a definite bronchitis and a slight patch of bronchopneumonia on the right side. This gradually subsided, and in eleven days he was practically over his acute attack.

A roentgenogram taken at this time shows a very unusual condition. On the right there are the findings of a bronchopneumonia and the left side of the chest shows a uniform, dense shadow from top to bottom. A series of x -ray plates made in February, 1922, and April, 1923, show an increase in the space occupied by the right lung, very definitely encroaching on the left. The third picture, taken in February, 1925, shows the same condition, a uniform shadow on the left and an apparently normal lung shadow on the right.

There is practically no chest expansion on the left side, and there is very exaggerated breathing over the entire right side. Definitely to the left of the sternum there is a good note. The point of maximal impulse in the heart is high up in the axilla, and the heart sounds are heard best here. The heart has been pushed over, due to the compensatory hypertrophy in the left side of the heart. There is breathing over the left side, but in all probability these breath-sounds are transmitted from the right.

As the condition was present at four weeks without any acute illness preceding, this must be a congenital abnormality. Either there has been no distention of the lung, or there has been some interruption in the large bronchus of the left lung, possibly a membrane, which has made it impossible for the child to aspirate air into the left lung. In all probability a congenital anomaly has prevented the entrance of air into the left lung and the lung is gradually shrinking, all the available air space being taken up by the right lung. The child is able in this way to get enough to take care of his immediate needs. We recently observed a complete absence of the right lung with pneumothorax. Breath-sounds were absent, and the breathing was restricted.

Surgical interference does not seem indicated in this case. The boy is compensating in the best way possible. The only thing that might be of assistance is a bronchoscopic examination to see if a membrane may be obstructing the entrance of air into the left lung.

CASE 5.—This child is five months old. At birth he weighed 9.25 pounds, and at present his weight is 14.5 pounds. There are three other children in the family; all well. This child was breast-fed for two weeks and since then artificially fed. At two weeks of age he suddenly developed a loud wheeze on breathing, which continued for one month. March 28 roentgenogram showed an enlarged thymus, and the child received an x -ray treatment. He seemed much improved for a time and then became worse. A second treatment was given, followed by a third four days later. Breathing has been about the same.

Examination of the throat is negative. At pres-

ent the Roentgen ray shows nothing abnormal. He has a definite inspiratory stridor, but expiration seems to be entirely without difficulty. Excitement or crying produces hoarseness. As long as he is breathing quietly the inspiratory sound is heard. The expiration is perfectly clear. There is no sound as of mucus or anything in the larynx or bronchial tree, nothing but the single sound at the beginning of the inspiration which becomes definitely worse with excitement.

This so-called congenital stridor is of great importance. In most instances it is due to a peculiar softness of the cartilages of the larynx. With inspiration the larynx collapses, and the drawing in of air through the narrow passage causes this peculiar sound. The air escapes without difficulty, and only on inspiration does this peculiar sound occur. The importance of this group of cases lies in the fact that the condition is supposed to be caused by an enlarged thymus. A review of the literature leaves some doubt as to what the symptoms of an enlarged thymus are.

There seems to be a geographic localization of enlargement of the thymus. Statistics from Cincinnati and one or two other places give the impression that enlargement of the thymus is common. If we rely upon clinical symptoms and not alone upon x -ray pictures, the condition is found in a much smaller group. A certain group of children with enlarged thymus glands have no symptoms. It is a question whether treatment is justified in such cases. If symptoms are present, however, the child should have Roentgen-ray therapy. With the enlarged thymus which produces symptoms there is, in my experience, both inspiratory and expiratory stridor.

There are three types of stridor, the inspiratory due to catarrhal croup, congenital atony, and laryngismus stridulus, the expiratory stridor of asthma, and the inspiratory-expiratory stridor due to actual narrowing of the throat, larynx, or bronchial tree (diphtherial, pressure of glands, and retropharyngeal abscess). If the thymus is pressing on the bronchial tree, both the inspiratory and expiratory stridors are present. If, however, only the one or the other exists, there is no definite obstruction of the respiratory passages. In congenital atony of the larynx there is a distinct inspiratory stridor, becoming worse with excitement. This persists for years and is seen in children of eight to ten years when excited. It is of no great importance except in rare cases in which there may be complete collapse of the larynx, which usually occurs during the first weeks of life. No treatment is indicated for the children outgrow the condition with hardening of the larynx.

CASE 6.—This little patient also has a stridor. There is another type of obstruction in small infants more difficult to distinguish than obstruction due to enlargement of the thymus, that is, the so-called mechanical obstruction due to the presence of mucus in the bronchial tree. Capillary bronchitis gives as marked suprasternal and infrasternal retraction as any other obstruction. This type of stridor is seen in small children, particularly in the premature, because of the difficulty of ridding themselves of secretion from the bronchi. For hours at a time one can feel a little mass of mucus being rocked back and forth in the trachea. This stridor is more sug-

gestive of that of the catarrhal group because frequently there is some swelling in the larynx. As in true obstruction, the condition is present both on inspiration and expiration. The characteristic feature is the clearing up of the condition when the child takes a deep breath. Coughing clears out the mucus and for a time the condition is definitely im-

proved. The stridor due to enlargement of the thymus is practically constant.

Although the use of Roentgen-ray therapy over the thymic region in infants is usually without danger, at present entirely too many children are given this treatment because the Roentgen ray shows slight evidence of thymic enlargement.

ROENTGENOGRAMS IN PENETRATING EYE INJURIES

By J. A. WATSON, M.D., F.A.C.S.

MINNEAPOLIS, MINNESOTA

One would think that it would be hardly necessary to draw any attention to the subject of this article. Experience, however, shows that there is very great need for drawing repeated attention to it, and for frequently laying such emphasis upon it that any man who is ever called upon to examine eye-injury cases, be he general practitioner, industrial surgeon, or ophthalmologist, cannot but be aroused to the consequences, dangerous to his patient and extremely disagreeable and depressing to himself, which are likely to result, and often have resulted, from a failure to realize its importance.

To begin with, let me state a hard-and-fast and inflexible rule which we have adopted at our institution, the Eye, Ear, Nose, and Throat Clinic, and which we believe everyone else should adopt who does not immediately refer his eye injury cases to others for diagnosis and treatment. It is this: In every case of injury to an eye, if there be, not alone any probability, but the least possibility, the least ground for suspicion that the eye might have been struck by a flying fragment or that a foreign body might have been carried into the eye by a penetrating instrument or a weapon, *take a roentgenogram of the eye.*

I have no statistics, no tabulation of cases. In fact this is not a very scientific article, nor an article requiring much profound thought. It has only two merits, one that it is needed; another, that it sticks to its theme, which is the rule stated above. Still, there are cases aplenty to prove my point. For instance, a well-known Wisconsin ophthalmologist saw an eye, perhaps two years ago, which was supposed to have been struck by a large piece of metal. No x -ray picture was taken. Later, when the eye began to go bad, someone else took a picture and found a small piece of metal in the vitreous, as I remember it. Soon the eye was removed, and the patient is now blind in both eyes. Just a few weeks ago I noticed that judgment against the ophthalmologist had been confirmed by the Supreme Court. I

happen to know about this case because I was asked to testify for the plaintiff, but refused. I sometimes wonder if I ought to have refused.

Only this last summer a young boy was referred to me by a general practitioner in the country. He had been playing with a dynamite cap two weeks previously. His face was peppered with fragments from the explosion, and the doctor removed some from the lids and conjunctiva of the left eye. The eye was red, but not painful. But it became painful, and the sight grew dim after a week. No x -ray picture was taken until I saw him. Then it revealed a fragment in the lens, one in the vitreous, and one in the orbit; in addition one was embedded in the sclera. That in the sclera was easily removed. The fragment in the vitreous was removed with difficulty and considerable damage undoubtedly to the vitreous by a forceps, used because the metal was non-magnetic, introduced through a small scleral incision. However, there was already a rather severe inflammatory reaction, and later I was obliged to remove the eye.

Of course, this eye would most likely have been lost in any case; nevertheless there might have been a chance to have saved it had the condition been recognized in time. Even the fragment in the lens might have been disposed of by a cataract extraction, leaving him perhaps an eye that would have been more useful than an artificial one. Naturally, however, copper is much more difficult to deal with than a magnetic foreign body.

A man from Montana consulted me last December. Twenty months previously he was struck in the left eye by a fragment of galvanized piping. The lid, he said, was cut, and the eye was red and sore for some time. The doctor who attended him, a general practitioner who devoted a good deal of time to ophthalmology, evidently recognized the possibilities; but he did not suggest an x -ray examination. Instead, he had an electrician construct a magnet which was de-

scribed as "extremely powerful." This was applied to the eye without any localization or preliminary incision. Naturally there was no result, and it was concluded that there was nothing in the eye. He did not remember as to whether the application of the magnet caused any pain.

Now the eye showed siderosis; the sight was almost gone; the eye was tender; and both eyes were sensitive to light. He refused to have the eye enucleated and insisted that an attempt be made to extract the small foreign body which the *x*-ray revealed in the vitreous. So it was extracted by a magnet through a scleral incision below the internal rectus. No great difficulty was experienced in spite of the length of time it had been embedded there, and there appeared to be very little reaction. The ultimate result I do not know, but he was warned of the danger. He took the road homeward as Saul took the road to Damascus, breathing forth threatenings and slaughter. I hope that he, too, like Saul, experienced a change of heart before he arrived at his destination. I have heard nothing.

About two years ago I saw a man who had been under the care of a deservedly well thought of ophthalmologist in a certain western state. I have mislaid the record of this case, but the facts that stand out in my mind are that his eye had been injured by a flying body, that no *x*-ray picture had been taken though the accident had occurred weeks before, that the eye was irritable and the sight much impaired, that the *x*-ray revealed a foreign body, and that the eye was subsequently lost.

We have also in our records histories of the following cases:

A man was struck in the eye by what he supposed was a piece of steel on March 25, 1925. Within two days his vision was gone in that eye, and for some days he suffered considerable pain; but no *x*-ray examination was made until he came to the Clinic on August 14, and then the *x*-ray showed a foreign body far back in the vitreous. The lens was cataractous. An attempt at extraction by magnet failed. Perhaps the foreign body was not magnetic, but the explanation most likely to occur or be suggested to a disgruntled patient or a damage-suit attorney is that owing to the long period of time since the accident firm adhesions had formed. The outcome of this case is not yet known, but the foreign body remains in the eye, and almost certainly the eyeball will be sacrificed, sooner or later.

On December 9, 1922, a man was struck in the left eye by a piece of steel while calking horse-shoes. There was severe pain at first. He was

treated by a general practitioner for seven weeks. No *x*-ray picture was taken. On May 6, 1923, the eye showed siderosis, the lens was partly cataractous, vision was 15/200, and a roentgenogram showed the presence of a foreign body in the vitreous. It was removed by the magnet, and a fair result obtained in spite of the siderosis and inflammatory reaction. The result would probably have been nearly perfect had it been removed early.

Now, may there be any exceptions or insuperable objections to this rule, or can any valid reason be offered in any case for its non-observance?

Consider, first, the objection on the score of expense. There is no case in which the rule may not be urged in the face of this objection. The advice that it should be observed clears the doctor's skirts, whether that advice be followed or not; but the advice and the reasons for it should be given and its observance urged in no uncertain way, and this preferably in the presence of witnesses.

Then, strangely enough, there are still to be found men who seem to think that it is useless to attempt the removal of foreign bodies from the interior of an eye, because, in their estimation, it is hopeless as far as the integrity of the eye is concerned. I have heard something like this view expressed even by ophthalmologists. Only last week one of my partners, Dr. W. E. Patterson, removed a small piece of steel from the vitreous of an eye in which it had lodged a few days before. Two of our best-known ophthalmologists had seen the case, had diagnosed the condition, and had had the foreign body exactly localized by an expert in that work. I do not know with what object this was done, because they then advised against interference and suggested watchful waiting. Why? They must have considered it hopeless. But in that case they should have advised removing the eye, as it could be only a source of trouble and danger and would certainly be lost eventually. But it was a small piece of steel, and the operation for removing it was comparatively easy, thanks to the aid of the magnet. Now he is likely to have a fairly useful eye.

But this objection of hopelessness, for apparently it does exist in the minds of even some ophthalmologists, is not a valid one. I have a case in mind of a young man from whose eye I removed a magnetic foreign body many years ago. It was lodged in the retina close to the optic nerve on the nasal side. The eye recovered with absolutely normal vision, except for a slight scotoma, the consciousness of which gradually disappeared. A small white scar can still be seen

in the retina. I have seen other cases nearly as remarkable and many cases in which a perfectly satisfactory result was obtained. In fact there are few ophthalmologists who have not removed foreign bodies from all parts of the interior of the eyeball with good results. In the case of small magnetic foreign bodies the prognosis is usually good when the injury is a recent one.

It is true that there is an occasional failure to discover the presence of the foreign body even by means of the x -ray, and it has happened that foreign bodies located in the lids or orbit have occasionally been wrongly located in the eyeball, and injurious attempts made to remove them. But no sensible person will argue that this constitutes any objection to the rule.

Is one justified in non-observance of the rule when he can see a foreign body embedded in the sclera, or cornea, or iris, or lens, or, for that matter, in any part of the eye, even the vitreous or retina? No, because there may be two or

more foreign bodies, and the removal of the one that can be seen is no guarantee that another which can not be seen may not remain. There have been such cases, some of them resulting disastrously.

Naturally, the rule does not apply in the case of dust particles driven by the wind, nor other particulate substances, such as cinders, which are not the result of sudden disintegrating force and could not possibly have been driven with sufficient velocity to penetrate the coats of the eyeball.

Possibly there is one general exception to the rule. If an eyeball has been so severely injured that upon examination it is evident that it must be removed one is justified in proceeding to do so without x -ray examination. Even in such cases, however, it is desirable in the interest of exact diagnosis and in order to make clear to the patient and his friends the true condition of affairs.

SYSTEMIC MANIFESTATIONS OF OTITIS MEDIA AND MASTOID INVOLVEMENT IN VERY EARLY INFANCY*

By JOSEPH S. ROGERS, M.D.

The Hot Springs Clinic

HOT SPRINGS, SOUTH DAKOTA

In the first months of an infant's life it is difficult for us to regard tonsils and adenoids as primary foci of infecting micro-organisms, although clinical experience has taught that the tonsils and adenoids should be regarded as the primary foci and that the infection travels either by continuity or by invasion through natural channels into the paranasal sinuses. Nevertheless, it is quite evident in the very early infant that the tonsils and adenoids do not show special manifestations of infection; at least, they play a very minor part, while the paranasal sinuses, especially the middle ear and mastoid regions, often show rapid and virulent infection with a very marked clinical trend of symptoms. It is in this type of early infection I desire to record and point out unusual and rather constant intestinal and other manifestations.

THE CLINICAL PICTURE

The disease picture is quite constant and uniform in these small infants, and we have learned to associate certain signs and symptoms with infection of the middle ear. The first of these are

the gastro-intestinal disturbances. In fact, the early recognition of the type of diarrhea presented led to the earlier diagnosis of otitis media. We find the stools green in color and containing considerable mucus. The mucus is clear and jelly-like, and the odor is not offensive. There are ten to twelve stools daily.¹ This varies considerably from the number in the infantile gastro-intestinal disturbances and colitis, where we usually observe eighteen to twenty evacuations daily. In the first few days of the onset of otitis media this intestinal symptom of ten to twelve green mucous evacuations daily is the only symptom noted, although there may be slight elevation of temperature. Later the temperature ranges from 99.8° to 102° F. As the disease progresses the skin develops a poor color and is septic in character, the eyes are sunken, and dehydration becomes pronounced. Although some restlessness may develop and there may be tossing of the head from side to side in the later stage of the infection, this is not constant. Pain is not a predominating symptom.

It has been our fortune to observe in this Clinic

*Presented before the Black Hills District Medical Society at Hot Springs, S. D., August 26, 1925.

1. Personal communication from Dr. Albert H. Byfield, Iowa City, Iowa.

during the last year four cases apparently indicating a primary ear infection. The following are brief summaries of the cases studied during the last year.

CASE 1.—L. H., male, aged 18 month. Family history, negative. This baby had been breast-fed and then placed on a general diet. About one week previously the child developed the usual symptoms of acute respiratory infection with diarrhea and an indefinite history of twelve to fifteen green mucous evacuations daily. This case had previously been diagnosed as "intestinal flu." On entering the hospital on October 19, 1924, the temperature was 102.6°; color poor and very septic with marked dehydration. The abdominal skin was leathery and during the twenty-four hours there were ten bowel movements, green and containing considerable mucus. On October 21 the temperature was 103.8°. At this time both ears were examined, and the tympanum of the left ear appeared pink in color, while the right ear showed a dull-white color and was somewhat thickened. Paracentesis of both tympani revealed a drop of serum in the left ear and some blood. Pus flowed from the right ear. On October 22 the temperature was 100° and there was some drainage from the right ear. On October 23 the temperature was 99.2°. The right ear was still discharging. On October 25 the temperature was 104.6°. The right ear irrigation returned clear. The mastoid did not show any evidence of involvement. On October 27 the temperature was 102°. There was some discharge from the right ear. On October 28 the temperature was 104°, and there were pronounced dehydration and prostration, and the patient was very listless. The baby showed a profound sepsis, and evidently there was a mastoid involvement, but there appeared to be no external manifestations. The temperature soon reached 106.2° with dehydration and sepsis rapidly increasing. Mastoidectomy was indicated, but it was quite evident, because of the extreme prostration and the advanced stage of sepsis, that an operation would be of no avail and disappointing. The baby died at 6:15 P. M. on October 28, 1924.

CASE 2.—J. W., male, aged two months. Family history was negative.

This baby had been breast-fed for one month, when it began to cry continually. The mother believed that the breast-milk was not agreeing and substituted the Eagle Brand of milk feeding which apparently agreed until a week previously, when diarrhea developed with ten to twelve green stools a day containing mucus and a few curds. This baby's condition had been diagnosed as *malnutrition*. It was brought to the hospital on January 19, 1925. When seen in the hospital the temperature was 100.8°. The baby was at once placed on a modified cow's milk feeding. On January 20 the temperature was 99.8° with the continued ten to twelve green mucous stools. On January 22 the temperature was 100.8°, and there were eleven green mucus stools. On January 23 the temperature was 100.6°. We examined both ears. The rim of the left tympanum appeared pink in color, while the right ear drum appeared red in color. We did a paracentesis on both ears, and we detected a slight serous fluid discharging from the right ear. On January 24 the temperature was 99.4°. On January 27 the temper-

ature was 98.6°. On January 29 the temperature was 99°. There were three stools yellow in color and of normal consistency. On February 1st the baby was discharged from the hospital apparently completely recovered. This baby is now well. It is of normal weight and height.

CASE 3.—C. S., female, aged five months. Family history, negative. It was admitted to the hospital on February 2, 1925. It had been ill for two weeks with indigestion. One week previously the bowel movements became more frequent. There was a history of ten to twelve in twenty-four hours. The temperature had ranged from 99.5° to 100°. When the patient was admitted to the hospital the rectal temperature was found to be 99.4°. On February 3 the temperature was 100°. At this time an otoscopic examination was made, and we found the rim of the left tympanum apparently pink and the whole right tympanum red in color. A paracentesis of both ears was made, and a little serum discharge came from the right ear, and the next day pus appeared. On February 7 the temperature was 99.2°. On February 9 the temperature was 98.8°. The right ear was still discharging pus; however the bowel condition had returned to normal with two stools daily, which were of normal consistency. On February 12 the baby was discharged from the hospital although the right ear was still discharging. The mother was instructed to continue the ear flushings at home. The baby made a rapid and complete recovery.

CASE 4.—A. H., female, aged four months. Family history, negative. The onset began about a week previous with restlessness and irritability. The bowel movements soon became more frequent. The feces were green in color, and there was considerable mucus. The mother informed me that there were ten to twelve movements daily and that the child had had some fever. It was suggested by her home physician that probably the breast-milk was not agreeing with the baby. This child entered the hospital on February 20, 1925. The temperature at that time was 100.6°. On February 21 the temperature was 100.2°. We examined the tympana, and the right ear drum appeared red in color, while the left ear drum was apparently normal; however we did a paracentesis on both ears. There was a serous discharge from the right ear, which later developed pus. On February 23 the temperature was 104°. On February 24 the temperature was 103°, and on February 25 the temperature was 99.6°. The stools very rapidly returned to a normal appearance and decreased in number. On March 1 the temperature was 99.2°. The patient was discharged from the hospital greatly improved, and the mother was instructed to continue the ear irrigations. The baby was able to continue the breast-feeding, and she made a complete recovery.

THE TYMPANUM

We find certain points of interest which deserve some mention in our observations of these sick infants. We are especially impressed by the appearance of the tympanum in the course of an attack of otitis media. In the initial stage of this disease when we have only the clinical picture of ten to twelve bowel evacuations daily and a slight

elevation of temperature, the otoscopic examination of the tympanum will show the rim of the tympanum slightly red. If the tympanum is punctured during this period, a distinct snap is heard as though tension had been relieved, and a drop of serum will be noticed. Following paracentesis of the tympanum we usually observe reduction of fever and rapid improvement of the bowel condition. When the infection has advanced somewhat with higher temperature and slight dehydration, the tympanum will appear to be red in color, and, following a paracentesis of the ear drum at this time, we will find two or three drops of a bloody fluid exuding from the puncture. When the disease is well advanced, we will continue to observe the ten to twelve green mucous stools daily, the temperature much higher with marked dehydration, tossing of the head from side to side, and the skin suggesting profound sepsis. The tympanum, then, will exhibit a dull-white color and apparently thickened membrane. If paracentesis is made at this stage of the disease we will find pus appearing from the puncture.

THE MASTOID

As the mastoid in these infants is small and contains only a single cavity or antrum, which communicates directly with the vault of the middle ear, it is quite probable that, in all cases of otitis media, there is pus in the mastoid antrum, and in the early paracentesis of the ear drum the pus in the antrum usually drains into the middle ear. Swelling over the mastoid is not a characteristic symptom in this disease of the young infant unless a postauricular abscess develops through the outer bony wall over the antrum. Pain is not a symptom in these cases except in the late development of a mastoid infection with high fever and marked dehydration. Then our attention is attracted to the tossing of the head from side to side. If pus continues to drain readily from the punctured ear drum and the temperature subsides, we are reasonably certain that the antrum is draining freely. However, on

the other hand, if the pus discharge suddenly ceases and the temperature develops rapidly with marked dehydration, it is evidence of a mastoid involvement and the mastoid operation at once suggests itself.

ROENTGENOGRAPHIC FINDINGS

In the diagnosis of the pathological condition of the mastoid in these small infants, we find the *x*-ray very unreliable. The smallness of the mastoid cell and the bone surrounding the cell with its spongy framework does not give the clear picture which we obtain in the adult, and the outline of the mastoid cell when present on the plate is almost always blurred. Because of these facts we cannot depend upon Roentgen-ray findings in the diagnosis of mastoid involvement in early infancy, but we must depend upon our clinical findings to make a diagnosis of mastoiditis in these babies.

TREATMENT

The early paracentesis of the tympanum is the very essential thing and the logical procedure in every case. If the temperature continues and a sharp rise is noted, the mastoid operation is indicated.

CONCLUSIONS

From a study of the cases reported it would seem, then, that the following conclusions are justified:

1. Otitis media in the very early infant apparently may be primary.
2. Otitis media should be suspected as the etiologic factor if there are ten to twelve daily green stools containing considerable mucus and there is slight elevation of temperature.
3. If the temperature continues to increase, suspect mastoid involvement.
4. Our experience in this Clinic demonstrates that early puncture of the tympanum is usually sufficient to control the disease.
5. The *x*-ray findings of the mastoid antrum in these little infants are not satisfactory.
6. Pain is not a predominating symptom.

THE CULT AT THE GATES

BY AN OLD COUNTRY DOCTOR

The troubles that beset the medical profession are great and many; but as some of them at least appear to be caused by our own lack of "*savoir faire*," it is proper that they should be examined by discussion among ourselves.

One of the clouds that loom portentously on our horizon, is this question of the cults; and as this cloud becomes darker and larger, we begin to wonder what is going to happen and to consider some means for our own safety. This

question is one on which the general practitioner is qualified to express an opinion, because he it is who meets the cult face to face in general practice.

The difference between the cult and scientific medicine is fundamental. As scientific medicine comes up to us through the ages, whether immersed in medieval darkness, entwined by superstition or allied with necromancy and the black art, it has always had a core of scientific fact; whereas the cult is without substance—it is a shadow having only two dimensions. The cult cannot furnish a pabulum for academic study for it is itself merely a reflection of some passing wave of commotion in the public mind, and being purely of psychological origin it cannot be compared to scientific medicine, which rests on a base of concrete scientific fact. If we could grasp this conception of the cult we would refrain from interfering with it as it passes through the various stages of evolution peculiar to itself.

Scientific medicine is capable of sustained constructive power and is not susceptible to external influences. The absence of anything like constructive originality in the cult renders it extremely susceptible to outside influences, so that when we impose what we regard as improvements on the cult we find that we have perverted its evolution and caused it to hatch out a bogus medical profession, which attaches itself to us as a parasite and feeds at our expense until such time as we are driven to give it some kind of recognition.

When cult schools begin springing up all over the country, holding out inducements to students in the shape of an abbreviated course of study, we fail to recognize this as the swan song of that particular cult. Instead of that we force them to have preliminary education and to improve and lengthen their course of study by studying medical subjects, thus introducing them to the general practice of medicine.

Preliminary education is not necessary for any one who desires to take up the study of a cult. A person without education will make as successful a cult practitioner as one who is highly educated. Neither is any great length of time necessary for study at a cult college, there is not much to study, the subject of "Commercial Publicity" being their principal branch. Graduates of a school of this kind are not a danger to the public health—they are afraid of the general practice of medicine, and they ask for few if any privileges at the hands of legislators. The danger to the public health lies in the graduates of the schools which have obeyed our mandate,

to raise their requirements and who demand corresponding privileges.

These half and half doctors who have had a little medical knowledge thrust upon them, give force to the old adage, that "a little knowledge is a dangerous thing," these are the real menace to the dear public, and the more we educate them the more dangerous they become until, by passing some examination or other, they join the ranks of low mediocrity in our own profession where they are no less of a danger than before. We read in the *Journal of the A. M. A.*, Vol. 82, No. 26, that "In 1920 the medical profession of New Jersey won the hardest fight of its history, when by united demand of all of its members, it compelled the State to require Chiropractors to have some education." Now, we fail to see the victory here. Are they not arming the enemy? It is difficult to perceive just what benefit the medical profession of New Jersey will derive from having the Chiropractors have "some education." The Chiropractors do not need any education unless they ultimately intend to join the regular medical profession. The Chiropractor who has "some education," (which means of course that he has studied some of the medical or premedical branches) is a far greater menace to the public health because he dabbles in general medicine than is the Chiropractor who has not got "some education," but who confines himself to Chiropractic. Chiropractic is harmless or very nearly so. Besides the Simon pure Chiropractor has a wholesome fear of general medical practice with its many pitfalls. We have all seen the cultist leaving the patient's house in a panic when the patient had taken a turn for the worse, declaring that he was "not a physician" and advising the people to call a real doctor.

These scenes will not occur so often when the Chiropractors have "some education" and the privileges that cannot be denied them when they come up to the requirements demanded by us. They will probably restrict the numbers of the Chiropractors in New Jersey, but at the same time they will save them from deadly and disastrous competition among themselves, so that Chiropractic will become a permanent institution in that state. If we judge the future by the past Chiropractors will eventually demand admission into the regular profession. Every time that we demand higher educational qualifications from a cult the cult demands more rights and privileges and of course gets them.

If our brethren in New Jersey, instead of making a "united demand" that the Chiropractors have "some education," had encouraged them to

multiply by leaving them alone, they would have been pushing Chiropractic into the path of a force that would have destroyed it instead of encouraging them to begin dabbling in regular medicine, as always happens when a cult has education imposed on it.

Lately we have been advised to fight the cults with their own weapons—to advertise. The medical profession in War and Peace, on Land and Sea, on the battlefield and in the breath of the pestilence, has always performed its duty without bravado. This is one of our most seemly graces, one of our high traditions, not to be lightly cast aside. If we advertise we reduce ourselves to the level of the cults. We would lose much of our dignity in the public eye. It would look as if we were betraying the confidence of our patients. Moreover, the cults would probably outwit us at this their own game.

As it is we have many able advertisers in our own ranks who do not need any encouragement along this line. An article in one of our best magazines appeared lately in which the writer tells us that “we are bound by foolish tradition, that away back in Old England we looked upon ourselves as one of the ‘learned professions,’ and did not even call our compensation a *fee*, but called it an *honorarium*.” We hope we are one of the learned professions yet. Besides, what difference does it make whether we call our compensation an honorarium or a fee as long as we get it? This writer, with many others, advises us to advertise and get abreast of the times.

Our traditions may be old, but they are not necessarily foolish. Everybody agrees that we are poor business men, and we are deluged with advice from every direction. The medical profession may not be conspicuous for its business ability, but we have some individual members who help to make up for the deficiency. One fact stands out clearly. We have not improved one particle notwithstanding the advice that has been heaped upon us for a hundred years. We are still pointed to as a profession devoid of business sagacity, and as laggards in the money grabbing procession. It seems never to have occurred to any of our advisers that perhaps our business differed from other businesses in that the ordinary rules of business did not apply in our case.

This question of the cults involves the economic well being of the general practitioner. The half and half cultist, the half Osteopath and half “doctor” narrows the general practitioner’s sphere of influence and harasses him in his efforts to gain a livelihood, thereby preventing

him from doing his best work. In this way the half educated cultist injures the public indirectly, much more so than any Chiropractor or Osteopath who confines himself to his cult, and practices his harmless art among the people without either preliminary or other education. When we begin to force education on a cult it at first resists with all its might, but later the bewildered but cunning cult begins to see the advantage that will accrue to it by pretending to conform to our demands. It immediately demands, in return, rights and privileges for itself which more than equalize any fancied protection that we have thrown around the public; the cult has become really dangerous, and in the end everyone is the loser except the cultist. The cult is an unworthy object upon which to bestow such benefits. It has no capacity for development, and the education which we impose upon it, simply forms a shell into which the cult crawls to escape its enemies. The cult cannot stand alone, it is without tradition.

If we had expended the same energy on ourselves which we have expended in educating the cults, or if some benefactor had done for us thirty years ago that which we are doing for the cults to-day we would not have so much mediocrity and incompetence in our own profession as we have to-day.

The sooner we desist from trying to make Johns Hopkins men out of the cultists and begin to practice our own virtues among ourselves the sooner will this cult question be solved, and we shall have time to turn our attention to our own improvement. We have had much bitter experience in trying to raise changelings from among the cults, and more so here in America than elsewhere.

The profession of medicine has no political function to perform. All that the public demands of us, as far as education is concerned, is that we turn out highly skilled medical men. If we do this the public will not complain at the methods which we employ, the end will justify the means. The public are not going to assist us in this; we must do it ourselves. If we fail, the public will not hesitate to express its contempt for us and withdraw its confidence.

The public is expressing its contempt for us now by aiding and abetting the cults, through legislative action and otherwise. But if we are able to preserve a homogeneous medical profession, the members of which have similar professional ideals and therefore the ability to act together for the effective realization of those ideals, there will be no dearth of public support.

The members of our profession should have, to a large degree, the same cultural background and must pass through a standard type of medical training. Scientific medicine can be practiced in any environment, and those who intend to practice it should receive a training in accordance with certain prescribed and uniform standards.

The absorption of Osteopaths, the education of Chiropractors, and the existence of distinct systems of preparation for the study of medicine will make it impossible to build up a homogeneous medical profession capable of united progressive action, in fact it will destroy what homogeneity we already have.

Much harm has already been done which it may be impossible to undo. We should at least stop interfering with the cults any further—stop educating them, trusting that the cheapness of their ideals, the absence of nobility of thought or purpose of achievement may eventually discredit them with the public. In the meantime we can try to set our own house in order, convincing ourselves that the trouble is with us and not with the public or the cults. Some of the Osteopathic colleges at least are pursuing a deliberate policy to gain full recognition as M.D.'s, and unless we can handle the situation intelligently we shall be forced to receive them into our already overcrowded profession, in fact we cannot very consistently deny them admission, because are they not the product of our own interference?

Every year the country is flooded with thousands of highly qualified young regular doctors who have got to jam themselves in somewhere to make a living and still much ink is spilled on the theme of "The scarcity of doctors in the rural districts," and we are advised to turn out still more doctors, some writers suggesting that

an inferior kind of doctor would do, as they explain that the average young graduate of to-day has spent so much time and money on his education that he does not feel that the country is the place for him, and he goes to the city where his merits are appreciated and where money is more easily made by taking up a specialty. Nobody, however, tells us the name of that city or where it is located. Merit is all right for the foundation, but the foundation is not visible to the public. It is the banners floating on the roof that catch the public eye. Disillusionment waits on many of these young doctors. Their medical training has been of the very best but their minds are filled with precept and platitude concerning the actual practice of medicine. It will take them ten years to get a true perspective.

No one need worry about the scarcity of doctors in the the rural districts. Times are changing, and this adjustment will be made in its natural sequence. In the meantime there are plenty of doctors of all kinds.

It is not necessary to educate the cults to take their place in the line of medical practitioners any more than it is necessary to make soldiers out of women.

When the regular profession of medicine is unable to meet the problems that confront it, there will still be time to marshal auxiliary forces. In the meantime a very material reduction of our own forces would enable us to do much more effective work than we are doing at present. There is one obvious remedy for this cult question:—control of medical practice by the profession with a single standardized process of selection for all. In the meantime give the cults a chance to discredit themselves by leaving them alone.

SOME COMMON CUTANEOUS DISORDERS: A CLINIC*

BY SAMUEL E. SWEITZER, M.D.

MINNEAPOLIS, MINNESOTA

CASE 1.—Psoriasis:

As you see, this woman has an eruption on the arms, hands, and general body surface. There is no evidence of scaling, but if there were a better light you could see a slight scaliness on the back. It is a case of psoriasis, but if you saw just the hands you would think it was eczema. There is

itching, although psoriasis usually does not show itching.

The opinion regarding this case is that the patient has chronic psoriasis, and has superimposed upon it an acute psoriasis and seborrheic keratosis. You can see this at this point (indicating). These frequently degenerate into cancers. They are a dirty brown, and you can see dozens of them on her back. I touched some of them with a little trichlor-

*Presented at Minneapolis Clinic Week, Minneapolis April 30-May 2, 1925.

cetic acid, and every one of them turned into a psoriasis lesion.

The treatment of psoriasis of this type is a little different from that of the chronic lesions. We usually put these patients on a protein-free diet as far as possible. At the present time this patient is taking some salicylates. Crocker was very fond of salicylates, and recently they have been re-introduced by intravenous use.

CASE 2.—Scrofuloderma, or tuberculosis colliquativa:

This young woman about a year ago had influenza, followed by pleurisy, and soon afterwards the glands in the neck enlarged. There was a bunch of glands on the right side, and one was operated on before I saw her. It is a case of scrofuloderma, or tuberculosis colliquativa.

I have treated her with small doses of x-ray one-fourth skin dose at a time, and most of the lesions have flattened out. She has responded nicely to this treatment, and, although there are still some glands, these will disappear.

CASE 3.—Impetigo:

I brought this boy over because he is an example of an extremely common disease, impetigo. These cases are very common, and occur in schools and among groups of children. The lesions start as small blisters filled with pus, and on washing the face these are broken open and the lesions multiply. They are usually much more numerous than they

are in this case, but we occasionally get an isolated impetigo like this.

We have a very nice treatment for this. In cases that are not so crusted as this we wipe them with benzine and treat them with 25 per cent silver nitrate. We forbid washing, and this treatment can be repeated a couple of times. In this kind of case there is so much damage from tearing off the scab that we use ammoniated mercury. The 10 per cent ammoniated mercury produced so much irritation that we cut this down to 2 per cent, which is not irritating. This treatment is very effective in these cases, but must be continued over a longer period.

CASE 4.—Lupus erythematosus:

This patient has a scar on the cheek which has been there since last summer, and he has a little scaling on the face. It is a beginning lupus erythematosus. This is supposed to be due to tuberculosis, but some of the cases are due to other causes. This is a very typical case. When the patient first came to the Clinic someone thought that possibly it was an epithelioma, but there is no raised, pearly edge, and it has the central scaling. There was a larger lesion above it.

He is being treated with mild ointment. In some of the cases in the beginning it is much nicer to give treatment that will not scar them. Sometimes I use just the calamine lotion. After it carries a scale we freeze it. This patient had a little lesion up here, and it was frozen, but not long enough. We use carbon dioxide snow and freeze each lesion for about forty-five seconds. This will cure the lesion, but will not prevent new lesions.

PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of October 19, 1925

The regular monthly meeting of the Minneapolis Clinical Club was held at the University Club on Monday evening, October 19, 1925. In the absence of both the president and vice-president, the meeting was called to order by the Secretary. The minutes of the September meeting were read and approved.

Dr. S. R. Maxeiner reported a case of an extreme type of hypospadias.

Dr. J. C. Michael read a paper entitled "Pyrogenetic Therapy in Psychiatry, with Special Reference to Malarial Treatment of Paresis," a summary of which follows:

Dr. Michael referred to Wagner-Jauregg as the originator of "fever therapy." It was in 1887 that the first report was published and the total literature prior to that time reviewed. The various forms of induced fever therapy since Jauregg's first report were discussed. Erysipelas, streptococcus, tuberculin, antistreptococcus serum, typhoid vaccine, sodium nucleinate, and milk have been used by different investigators. He then discussed the underlying theoretical conditions. There are two main theories: first, that the favorable results are really

ascribable to foreign protein bodies, and, secondly, there are direct effects of high fever upon the spirochete.

With reference to malarial treatment in paresis, Wagner-Jauregg's report of nine cases treated in 1917 is well known. Pilcz had investigated the histories on 5,000 who acquired syphilis between 1880 and 1890. Of the men who suffered from malaria, erysipelas, or other acute fevers, within the first few years after a primary luetic infection, no one developed paresis. No paretic later gave a history of such a fever. The reports in the literature of favorable remissions in paresis following malarial treatment were mentioned; for instance, Weigandt, in 1923, felt malarial treatment of paresis a step of great progress. Gertsman, in 1923, claimed 38 per cent remissions in 298 cases. Plehn admitted recession of mental symptoms in one-half of his cases. On the other hand Grant reported treatment of 40 cases, of whom, after fourteen months' treatment, three were well, only five improved, and the remaining not improved. Drs. Lewis, Hubbard, and Dyar, of St. Elizabeth's Hospital, Washington, had reported that mental, physical, and serological remissions occurred in 16 of 51 cases. Nineteen cases were not notably changed, but at least remained stationary. Twenty-five, or 49 per cent, were not favorably influenced; and of these 13 died. These

authors also report autopsies of four cases that died and conclude an apparent reduction in plasma cell and lymphocytic infiltration into the meninges and perivascular spaces. In two, brains spirochetes could not be found, and in the other two the organisms seemed "damaged."

The speaker then gave his preliminary report on his treatment of ten cases of paresis, beginning last April. Of these ten cases, six are up and about, getting along fairly well. One of the other four is up and about and has made some favorable progress but is unable to work. The other three are still in hospitals, one of whom improved, another has progressed unfavorably, and the third has remained stationary. It was noticed that tremors, restlessness, malnutrition, and mental symptoms were favorably influenced in all the cases that were benefited.

Dr. Michael said that the patients are given a preliminary quinine-tolerance test. Ten grains of quinine are administered by mouth; if no untoward symptoms follow, 5 c.c. of blood from a patient who is suffering from malaria are injected intravenously. Fever and chills make their appearance in from three to eight days. Since the strain used was a double tertian type, reactions in most instances occurred every day. Chills were terminated after the twelfth to the fifteenth reaction by the administration of ten grains of quinine as an initial dose, and five grains three times a day for ten days thereafter. During the first week after the termination of chills, the patients do not feel very well, but after that they pick up and during the second week gain in strength and general well-being. In most of the favorable cases, the results were very remarkable. Several cases of tabes were treated, but the speaker could not express much enthusiasm over the treatment of tabetics with malaria. Then reference was made to some 17 cases at the St. Peter State Hospital. Regarding these cases, only a few remarks could be made, it being too early to classify the results. However, five patients died within two months after treatment, two of them while receiving neosalvarsan injections following the termination of chills. These patients in institutions, as one might expect, were in a much more enfeebled condition physically. That such patients should not be inoculated seemed impressed upon the mind of the speaker. Further, it seemed that it were better not to treat these inoculated patients within a period of three months with neosalvarsan or other forms of chemotherapy. Emphasis should be made upon the opinion that malarial treatment should be restricted to institutions and then only to patients whose general physical condition shows no involvement of the internal organs,—heart, lungs, liver, kidneys, etc. The blood urea and leucocyte count should be estimated during the course of malarial infection every other day.

DISCUSSION

DR. BEARD: If you get a positive Wassermann and Nonne and gold curve, isn't that positive enough proof of paresis?

DR. MICHAEL: Not unless the clinical findings and history corroborate them. Making a diagnosis of paresis is sometimes difficult, and I dislike depending on a technician's report unless I have corroboration from either the history, neurological, or psychiatric findings.

DR. BEARD: What is the quinine treatment and how much do you give?

DR. MICHAEL: We give 10 grains before starting the treatment to see if the patient can tolerate the quinine. Then we give 10 grains for an initial dose after the fever, and follow with 5 grains, t.i.d., for ten days.

DR. BEARD: Have these been executive men or laboring men?

DR. MICHAEL: One was a barber, one a housewife, one a lawyer, another a salesman, several laborers, and so on.

DR. BEARD: Did any of them do much mental work?

DR. MICHAEL: I would keep them away from all mental work if I could for at least three months after apparently fair clinical recovery, and at least one year from strenuous mental work.

DR. BEARD: Where do you keep the carriers?

DR. MICHAEL: We just keep them running along from one syphilitic to another. We, of course, do not inject anybody who does not have active syphilis.

DR. BEARD: Isn't it just as good for other types of syphilis?

DR. MICHAEL: I could not say.

DR. MAXEINER: Have any of your patients had complications of tabes, like nerve pains of tabes, or Charcot joints?

DR. MICHAEL: Yes. It is frequently estimated that one out of ten paretics has had tabes prior to brain involvement. In my ten cases, four had signs of tabes. Pains do disappear. Of course there is the possible influence of suggestion in the remission of some symptoms. If a patient has an old so-called tabetic bladder I would be most cautious about trying the malarial treatment. No cases had Charcot joints.

DR. BEARD: I have seen many cases of chronic malarial carriers that have not cleared up.

DR. BARRON: In this treatment the acute cases respond much more readily as they do not become malaria-fast. Cases in the Southern states are very hard to reach by means of quinine. You can give them a course of treatment, and they are relieved for the present attack, then six or eight months afterwards they break out again. These are the acute forms, and you do not give them a chance to develop the sexual form; therefore it is very likely that many of these cases can be cured with smaller doses than cases that have run for many months.

DR. MICHAEL: That malaria could not be transmitted by inoculating a patient with malaria directly from another patient's blood, has been shown by investigators in Vienna.

DR. BARRON: The mosquito cannot transmit malaria in which the sexual forms have not developed. The mosquito must bite a patient who has had malaria long enough to have gametocytes in the blood. This type of infection is the asexual form unless you allow it to run long enough to develop the sexual forms in the blood.

DR. WEBB: Is a temperature of 105° more than the spirochete can stand?

DR. MICHAEL: Some claim it is the temperature that kills the spirochete; whereas others give the high fever itself no credit. I do not know as to that. Who can say but that there is a basis for both theories.

DR. SCHAAF: Of course it is the non-specific stimulation of the natural defense that produces the results. The results in Vienna have been very gratifying. I think the poor results in the State hospitals are due to the fact that those cases are much more deteriorated and the treatment might do more harm than good. A worker in India had very disastrous results treating malaria with neosalvarsan. It is absolutely ineffective and may prove dangerous.

DR. MICHAEL: Yes, I agree with that. When a patient has gone through a course of acute malaria, why not give him rest for a while? Let him recuperate. Let me repeat: (1) No patient should be inoculated for paresis unless the diagnosis is certain; (2) far-advanced paresis should be excluded; (3) paresis with a well-advanced tabes, especially if the urinary system is out of order, should be excluded; (4) no far-advanced tabetic should be treated with malaria; (5) during the fever and chills, the blood and urine must be checked regularly.

Dr. Floyd Grave demonstrated several basal metabolism charts which were made with the Roth-Benedict graphic metabolism apparatus.

The apparatus is the usual rebreathing type. The metabolic rate is determined by the amount of oxygen consumed during a given time. At the beginning of the test the tank is filled with oxygen. As the patient breathes in and out of the tank oxygen is consumed. The carbon dioxide breathed into the tank is absorbed by soda-lime. As the test goes on the bell descends as the oxygen is consumed and the carbon dioxide is absorbed.

The charts shown were made by a writing pen attached to the bell. During respiration the pen writes on the kymograph drum and indicates at a glance the evenness and depth of respiration. The time record is shown by a second writing pen at the base of the chart.

In a satisfactory record the respirations are all of about the same depth and the descent of the bell is even.

Chart No. I appears to be a very satisfactory record and gives the metabolic rate as plus 45.

Chart No. II is a record taken from the same patient but twenty-four hours later. This record appears satisfactory as the first and gives a reading of plus 23; about half the rate as determined only a day before.

Charts III and IV are taken from a different patient, twenty-four hours apart. They show the same difference in rates, plus 42 and plus 22. The readings are even and the respirations the same depth. Several other charts show the same difference.

Charts V and VI were taken one immediately after the other. They show rates on plus 34 and plus 24.

Since this difference has been discovered we have been taking two different sets of readings on two consecutive days. The first test always shows a higher reading than the second, which I think is due to psychic disturbances. In taking a test, I think the first reading should be discarded. Several

readings should be taken until a satisfactory agreement is shown.

Hyperthyroid cases are very much influenced by their surroundings and are apt to show a greater discrepancy in their tests than normal or hypothyroid cases. This is illustrated by Charts VII and VIII taken from the same patient and showing rates of minus 16 and minus 14.

DISCUSSION

DR. GRAVE: I believe that in those readings the patient did use that much oxygen, but metabolism is like the blood count,—it gives you the count for the time-being.

DR. SOUBA: What about your subsequent tests?

DR. GRAVE: They become more satisfactory after the patient has become accustomed to taking the test and to the surroundings in general.

DR. BELL: A very slight disturbance gives a very great difference in the rate. What can you tell about the psychic disturbance?

DR. GRAVE: Everything influences it, especially in a hyperthyroid case.

DR. MICHAEL: Should a patient who is to have a test made go to a hospital?

DR. GRAVE: I think it would usually be much better if it could be done in the home surrounding and have at least three tests.

DR. SCHAAF: At Rochester they always do three tests by three technicians and then take the average. They use the Haldane method there.

DR. BARRON: It is taken twice with two different tanks of air.

DR. WEBB: I think the metabolic people ought to get together and agree on some method.

FLOYD GRAVE, M.D.,
Secretary.

BOOK NOTICES

PEDIATRICS—Vol. IV of the Practical Medicine Series. Edited by Isaac A. Abt, M.D., with the collaboration of Johanna Hermann, M.D. Published by the Year Book Publishing Co., Chicago. Price \$2.00.

For the first time in more than twenty years, a year book appears exclusively devoted to Pediatrics. This volume contains reviews and references to the literature concerned, more particularly with the care of infants and children. The views of the various authors are presented briefly and clearly. The reader is aided in his judgment of new or radical treatments by the comments after such articles by the editor, Dr. Isaac Abt. The articles themselves cover almost any phase of diagnosis or treatment which the practitioner may meet from the diseases of the new-born, feeding of infants, gastric intestinal disease, infectious diseases, rheumatism, parasites, and tuberculosis to the mental development of children.

Articles as follows are reviewed: blood of the new-born, birth hemorrhage, complemental feed-

ing in new-born, child welfare, breast-feeding, concentrated feedings, acidophilus, lactic and hydrochloric acid milks, vitamins, constipation, diphtheria and scarlet fever immunization, x-ray in whooping cough, aleukemic leukemia, the Pirquet tuberculin test, insulin in juvenile diabetes, congenital goiter, exophthalmic goiter, iodine prophylaxis of goiter, mental health in school children, pyelitis in infancy, functional tests in nephritis, eczema, sinus infection, tetany, rickets, arsenic in human milk after arsphenamine injections, acidosis in children, cistern puncture, the use of diuretin in hydrocephalus, intraperitoneal therapy, light therapy, acute appendicitis, and hernias, intussusception. Besides the above a host of bizarre and rarer conditions are reviewed.

The work has both an author and a subject index, and the reader can read profitably whether he has a few minutes or a few hours at his disposal.

—L. F. RICHDORF, M.D.

PRACTICAL LECTURES. Delivered under the Auspices of the Medical Society of the County of Kings, Brooklyn, New York (1923-1924 Series). Pp. 484; 135 illustrations. Price, \$5.50. New York: Paul B. Hoeber, 1925.

This volume consists of a series of twenty-five lectures on practical subjects given before the Medical Society of the County of Kings, Brooklyn, New York.

Dr. James Ewing delivered a timely lecture on "The Rational Pathology and the New Therapeutics." He emphasizes the necessity of a fundamental knowledge of pathological anatomy in order to arrive at more accurate diagnoses and thereby be able to administer more rational therapeutics. He feels that there is a dangerous trend in medicine in overemphasizing chemical and physiological research and at the same time subordinating pathological anatomy and histology.

Dr. Joseph A. Blake presents a very interesting discussion on "The Surgical Abdomen." He brings out clearly the chief signs and symptoms that are of value in making a differential diagnosis. However, as an internist, the reviewer cannot entirely agree with his final paragraph in which he states that "generally speaking, where there is violent abdominal pain and vomiting it is safe to operate." Such a rule might be satisfactory when in the hands of such excellent diagnosticians as he is himself, but for less accurate observers such a procedure may lead to unnecessary laparotomies.

Dr. William Francis Campbell has an interesting chapter on appendicitis. He brings out a point in the

discussion that cannot be too often emphasized; and that is, that in the presence of a symptom complex suggesting an acute abdomen, no morphine should be given until a diagnosis has been established and the line of treatment decided upon. He states that the temperature and the leucocyte count are frequently of no value in the diagnosis of appendicitis. Whenever one is called upon to see a child with pain, increased temperature, vomiting, and abdominal distress, he should be sure to examine the lungs carefully so as to rule out pneumonia before the diagnosis of an acute abdomen is made.

The insulin treatment of diabetes is discussed by Dr. Louis C. Johnson. He gives a simple discussion of the method used in calculating the diet in diabetic cases and also on the administration of insulin, citing a number of cases to show the practical application of the combination of proper dieting and insulin.

Dr. Emanuel Libman presents his usual topic of choice, that of subacute bacterial endocarditis. He takes up the discussion of endocarditis in general and then considers the pathological, as well as the etiological, differential diagnoses between rheumatic endocarditis and subacute bacterial endocarditis. He stresses the point that the streptococci recovered from the blood of patients with rheumatic endocarditis are secondary invaders, and for that reason the patient's serum shows no immunological reactions against them, whereas in subacute bacterial endocarditis positive complementary fixation tests are obtained. The work of Dr. Clawson at the University of Minnesota does not bear out Dr. Libman's contention. Dr. Clawson believes that he has evidence in favor of malignant endocarditis being only a step further in the endocardial pathology associated with acute rheumatic fever.

An excellent review of epidemic encephalitis is presented by Dr. Frederick Tilney. He constructed several charts which illustrate the frequency of certain symptoms in the disease, the character of the onset, the focal symptoms resulting from involvement of certain parts of the nervous system, and the symptoms and findings in the different types of encephalitis. He presents a concise discussion of the pathological anatomy of this disease.

Obstetrical problems are discussed in three chapters by Dr. John Osborn Polak. His chapter on ectopic gestation is especially good.

These are but a few of the large variety of interesting lectures which comprise the volume. It is a valuable book for ready reference on the many subjects treated and would prove a valuable acquisition to the library of almost every practitioner.

—MOSES BARRON, M.D.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations
The Hennepin County Medical Society
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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ANGINA PECTORIS

Angina pectoris, if one is to believe the stories one hears at the clubs and the noon-day lunches from men who look and act as if they were well, is quite as common as the colds we have been having lately. There seems to be a certain feeling of pride among many of these men who claim they have angina in that they belong to an exclusive set in club districts; but if they really knew what they were talking about they would not be so flip in boasting of their own diseases!

In the first place, angina pectoris is not so common as one would be led to suppose. Neither is it always of the same type. The true angina pectoris, however, is very likely associated with some disease of the coronary vessels or perhaps with the cardiac muscle itself. The common form of angina, however, is more likely due to some disturbance of function, and it lacks the true type of pain which is found in the first form mentioned, and is not associated with any disease of the coronary arteries or the heart, and, fortunately, is rarely fatal, while the true form is commonly fatal.

One hears a great deal of heart pains, particularly among neurotic people, who can describe a better chain of symptoms than the individual with the true disease. In this same group of heart neuroses or functional cases there are many

emotional women who have so-called angina pectoris, and most of the authorities believe that it is due either to an infection or to abuse in the use of coffee, tea, and tobacco. In spite of the fact that the books say that angina pectoris is relatively infrequent in women,—if we are to believe the text-books as to one of the commonest causes, the excessive use of tobacco,—it occurs equally in both sexes; for at the present time there are more women using tobacco to excess than men. That may seem like a broad statement, but anyone who observes these women who have newly acquired the habit of smoking will find they are extremely indulgent and exceed their emotional and physical capacity for the consumption of tobacco. Aside from this there are many people, of course, who use tobacco and who do not suffer any precordial pain, yet it is among the toxic conditions which may eventually lead to, first, a functional and, later, a true form of angina pectoris. Dr. Osler found that in a series of 268 cases, 33 of them were physicians; that is not unusual, nor is the percentage very great, for physicians are frequently smokers and not infrequently smoke to excess. Here again enter the smoking abilities of doctors in their medical meetings and their committee meetings. They get into small rooms and fill the rooms with smoke and fill themselves and all their friends with smoke, and it is a wonder more doctors do not have angina pectoris than are recorded in literature. So it may be safe to assume that many times doctors have just as little sense as other people, although they are supposed to have more.

Painful sensations which occur in the vicinity of the heart may be included among this anomalous class of false angina, or pseudo-angina, or angina due to vasomotor disorders. Fortunately, they are the larger number, and, fortunately, too, there is very much less mortality among them. It is among this class of anginas that a number of incipient true anginas develop. These patients usually complain of an oppression, sometimes a shortness of breath; and, if they have pain at all, it does not radiate very much. Occasionally these incipient cases become true to type, and eventually they manifest all the characteristics of the major form of the disease, which is then a disease, and not a functional disorder. However, in all these cases, whether the true form or the false type, or the incipient type, the one important thing is to discover whether there is any disease of the aorta with hypertension and particularly whether syphilis is a factor in its development. Unfortunately, the aortitis group is not recognized early, but when it is and when it is found

to be due to syphilis the institution of treatment and care will at least mitigate symptoms or prolong the patient's life, or perhaps he may be entirely cured.

There are, of course, a number of remedies given for angina, but the chief thing of importance is the diagnosis as to whether it is the true or false form. Then, too, we must realize that in many cases we are unable to make out anything abnormal—whether the action of the heart muscle or the condition of the blood vessels, or anything that is related to the true form of angina pectoris; consequently under such circumstances it is difficult to know how to proceed except to warn the individuals that if they are walking too briskly or running upstairs too fast they had better slow down. Sudden emotion and especially sudden anger is one of the factors we must consider, that means a type of individual. And we believe it is quite fair to assume that the choleric individual is more apt to have a fatal attack than the man who is abstemious. Men who complain of a vice-like pain which is agonizing in character and radiates to the left shoulder and down the left arm may think they are very seriously ill and doubtless many of them are; but this is not enough to condemn a man to absolute inactivity or prevent him from carrying on some line of work. No man, unless he has a very calm disposition, can escape the fear and apprehension which comes with angina. When he finds that his face has suddenly grown ashy gray and that he has this tremendous and lancinating pain, very naturally he wonders what is going to happen. In the majority of people, however, these attacks pass away, and when their removable disorders are relieved, when their infections or syphilis may be cured, they are quite likely to live on to their expectancy.

Unfortunately in some instances, and by some authorities, Janeway, for instance, great importance is attached to arterial hypertension in the diagnosis of true angina pectoris. Yet with our uncertain knowledge of what blood pressure really means, it is not of as much value as one might think. Hypertension with a bad heart, with bad kidneys, and with diseased blood vessels means everything. Hypertension without the heart and blood vessels being involved means mostly a neurosis or an emotional disturbance. Yet these same severe attacks of angina may come with hypotension, and Janeway believes this is a bad sign.

Whether true or false angina is under consideration, some remedy must be devised, and the most commonly accepted remedy so far is the

ampoule of nitrite of amyl. This is put up in convenient ampoules or pearls that are covered with a silk envelope or silk-knitted covering which protects the individual from glass splinters and permits the nitrite of amyl to last a longer time. Usually one inhalation is quite enough; sometimes three or four are used in twenty-four hours. Another remedy is nitroglycerin in moderate doses. Another is sodium nitrite combined with sodium iodide; but if any doctor who has a case of angina has ever taken a dose of this detestable mixture, in whatever form it is put up, he will hesitate a long time before he gives it to his patient. Yet it has its uses, and it may be disguised in some way, best known to the pharmacist, and may be of some help in the true forms of angina. The latest form of treatment suggested, however, is by the surgeon. He proposes to go down to the sympathetic nervous system and eradicate some ganglia which are found in the vicinity of the spinal column. Many of these cases have been operated on, and doubtless some of them have been relieved. It looks like a hazardous proposition, but a man with a true angina will submit to almost any form of torture. It is supposed by Ransom that the removal of the sympathetic ganglia may prevent a reflex spasm in the coronary arteries and aorta. Penfield, in the December number of the *American Journal of the Medical Sciences*, reported a case where an operation had been performed, removing the inferior cervical and stellate ganglia on both sides. A section of this, of course, cuts off the cardiac plexus from the central nervous system. On the ninth day following the operation the patient suffered great pain in the head, was sitting straight up in bed, his forehead was moist with perspiration equally on both sides; the rest of his body was warm but not moist. He was perfectly clear, mentally. He had a tightness around the top of his head and in his gums. His blood pressure was over 300. He was given a dose of nitroglycerine and the pain "floated away," but his blood pressure still was 300 systolic and 0 diastolic. A year passed. His blood pressure had gone down, and he was restored to activity again, but he continued to have attacks of angina pectoris in the face and head and sometimes the neck. These attacks were relieved by nitroglycerine. The conclusions that Penfield arrives at are as follows:

1. The removal of a sympathetic ganglion removes the possibility of angina pectoris in the motor distribution of that ganglion only.

2. Pain is still possible in the motor distribution of the remaining ganglia, provided the stimulus arising in the heart or aorta is adequate.

3. Success in the operation depends not upon interrupting a direct afferent path from cardiac plexus to central nervous system as has been assumed, but upon the interruption of autonomic reflexes.

4. Complete cervico-upper-thoracic sympathectomy abolishes the pain, but should only be employed in cases where life is really insupportable even under the best medical care.

5. Removal of the superior cervical sympathetic ganglion does not render angina in the motor distribution of the other ganglia impossible. Its removal can only be justified on the basis of some resultant alteration in the coronary vessels or aorta which are innervated by it through the superior cardiac nerve.

6. Even if the operation is successful in abolishing pain, the patient should not be called cured but should still be considered as having a serious cardiac disease, and be treated accordingly.

SENSATIONALISM AND EMOTIONALISM

For the past two weeks the papers have been more or less filled with, or at least have repeatedly commented on, the crime condition in this country and particularly in Minneapolis. Many who have felt called upon have written letters to the papers airing their views on the subject, whether they have any real experience or whether it is simply a fancy to express an opinion and to see their names in print. However, some of them have been remarkably clean-cut and to-the-point views, and the editorials in all of the papers have been very decided in expressing an opinion as to what should be done with the Board of Parole and the parole system. It seems generally conceded that we are in very bad and that the Board of Parole should either be abolished or the system should be changed and particularly that the judges should be allowed to determine and pass a fixed sentence, and not be restricted, as they are, in passing judgment on these criminals, to the five-to-forty-year sentence.

The man who started all this trouble was one Stanley Sieban, who had been convicted of a crime, sentenced to state's prison, and within a short time permitted to be out on parole. He was again arrested for another crime, and ultimately he landed in the hospital at St. Peter for the criminally insane where he was considered insane for about four years. After this experience he was back again in Stillwater, and again paroled, with the hope that he would go to Canada and stay there! Very naturally, Canada was op-

posed to this kind of a immigrant, and he was promptly refused admission to that country. Shortly after this he attempted another hold-up and incidentally killed one policeman and wounded another, and was killed himself.

The question naturally arises as to why he was permitted to go out at all, based mainly on his insane record. The authorities at the State Hospital were evidently not consulted about his recovery, the sentencing judge was not informed of his parole, and consequently the entire country is more or less astir at what they are pleased to call the mismanagement of the parole system. It seems to us that it is more than mismanagement; that it is utterly absurd that a parole board, consisting of three men, should parole, without proper consultation with the authorities, any such criminal. It is stated in one of the papers that the president of the Board of Parole expressed his sorrow for this man's misdeeds with tears rolling down his cheeks. No wonder! He did not think about what he was doing; neither did the other members of the Board, or, at least, they were badly advised and their opinions were not adequately expressed.

It is very fortunate that Governor Christianson has decided to call an inquiry into the whole parole system and has named on his committee of twenty-five a number of district judges from various parts of the state, a few business men, and three women. It is quite likely that this body will take some definite action on the paroling of habitual criminals. The Board of Parole, however, justifies its conduct by statistics and shows that a certain number of people were paroled during the last five years and that a definite percentage of them are still worthy, all of which is another effort to prove that statistics are elastic, to say nothing about their susceptibility to all kinds of juggling and misrepresentation. The query comes up as to whether the Board has any real knowledge of or can follow up the average paroled person. That they do so for a time is admitted, for the sake of argument, but it is impossible to conceive that the majority of these paroled prisoners are watched very carefully. They can easily assume other names and identities, and they are sometimes never discovered until some greater crime is committed which brings them again to court.

Of course, there may be some merit in expressing our belief that the criminal is worthy of a great deal of consideration, but the consideration seems to be entirely on the side of criminals and not at all on the side of the injured individuals—the murdered man or woman. Hence

the cry for the kindly treatment of the criminal classes, expressed by numerous bodies and many individuals, is simply due to the fact that they are sentimental and easily affected emotionally; they themselves have neither judgment nor reason, nor should they have the right to decide the fate of a prisoner who has been brought to justice for a dangerous criminal act because they are not in a position to understand the facts which have been developed in court and which led to the conviction of the criminal.

The story has been told that Mr. Sousa was giving a concert with his band in a prison; and as the prisoners filed by the Warden called Sousa's attention to a fine-looking young man and said that he had been convicted of murder, was paroled soon afterward, and was again convicted of a second murder, which was promptly followed by another parole; finally, he was sent to prison the third time for a third murder—and the Warden expressed the hope that this time he would be kept in prison. The motives which led to that man's parole were not carefully studied; they were evidently influenced by someone's emotional state. Of course, it is not claimed that all criminals are insane; in fact very few of them can be classed as definitely insane. And these criminals are usually sent to hospitals for the insane and afterwards sent to the penitentiary provided no one interferes. But it is true that among the criminals of to-day the majority of them are young people (someone has said under twenty-five years of age), and it is probable that their home influences were not good; that they were neither trained nor taught obedience, nor taught the essentials of what is right or wrong. Hence they grow up unstable, uncertain in their conduct, and are wholly undesirable as citizens. Doubtless a large number of the criminals are types of moron; some are high-grade morons who are known to be clever, shrewd, and cunning, and able to put over any sort of crime, and yet they create a feeling of sympathy and influence through their friends, pardon boards, governors, and wardens of prisons, so that they may be let out purely on sentimental grounds.

The former president of the Federation of Women's Clubs, Mrs. T. G. Winter, of Minneapolis, expressed the hope that every man who carried a gun and was detected in a crime should be considered as a permanent criminal; and Father Cleary, a very prominent man in Minneapolis and much interested in citizenship and municipal affairs, declares no man should be pardoned after sentence has been passed on him for a crime. If we as private citizens who go

around attending to our business are to expect assault, murder, or highway robbery, it is time some definite action was taken, not only in this state, but in other states, to control the potential criminal, and if he is a murderer he should be given a full-life sentence and the judge should be authorized by law to sentence him in this manner, and his pardon should never be issued and his parole should never be sanctioned by the pardon board unless there is some physical reason why he should be out. Even then he should be under the most strict surveillance.

It is with a hopeful expression that the bankers and sheriffs of Minnesota have gotten together and are authorized to pay five thousand dollars for the death of a criminal who attempts to hold up a bank or commit a highway robbery or who is guilty of murder. Even though he misses fire, this man has murder in his heart because he has not brains enough to know what he is doing except that he is gratifying his own emotional wishes. He is a menace to the community and should be treated accordingly.

When a man like Sieban has been in the hospital for the insane for four years it seems almost incredible that any body of men should consider for a moment his pardon or parole. Why he should have been allowed to go to Canada alone and unprotected by an officer deserves serious consideration. It is almost a crime in itself. It is about time that the State officials began to consider the mental attitude of people and drop their sympathy for the criminal and consider the safety of the race.

PLAIN SPEAKING

We have referred several times in these columns to the evil of mumbling speech on the part of medical men who read papers at medical society meetings. We had come to believe that our "plain speaking" might be offensive. Now comes along a pleasant commendation of what we have said. The *American Medical Association Bulletin*, in its issue of last month (December, 1925), takes a fling at the poor (not the "loud") speakers as follows:

Is there anything that is more unpleasant than sitting in an audience chamber, large or small, and having some man get up and mumble a speech, of whatever sort, failing to open his mouth, failing to give a clearness of enunciation and to use a proper carrying voice? This question is raised in an editorial which recently appeared in the *Journal-Lancet*. Our judgment is that thousands of physicians who constantly attend the meetings of our many societies would, if opportunity offered, answer with a thunderous NO! 'Tis a "worrisome" thing to be forced to walk with a nail or a gravel in the heel of one's

shoe, but its far worse to sit and strain one's ears trying to understand the mumbling of men who are supposed to be saying something worth hearing but that cannot be heard. There are too many mumblers "on the program" at our medical meetings; too many who tuck their heads into their vests; too many who talk to the floor or to the curtain; too many who can't or won't talk to be heard.

The members of our medical societies go to their meetings to get information. Those who accept assignments on programs thereby contract to give worth-while information. They should give it so that it can be heard and understood.

Let us have plain speaking!

NEWS ITEMS

Dr. W. H. Smith has moved from Cold Spring to Donnelly.

Dr. J. E. Arnold has moved from Vernon Center to Mapleton.

Dr. O. J. Smith has moved from Summit, S. D., to New Effington, S. D.

Dr. Benjamin J. Martin has moved from Bemidji to Miami, Florida.

Dr. J. S. Grogan, of Flaxton, N. D., has joined the staff of the Wadena (Minn.) Clinic.

Dr. G. N. Butchart has been appointed health officer of Hibbing, to succeed Dr. Hugh Reynolds.

Dr. N. D. Kean, of Coleraine, was married last month to Mrs. Stella Evans, of Kansas City, Mo.

Dr. George A. Miners, of Deer River, was elected health officer of Itasca County last week.

Dr. Richard Bardon, a recent graduate of Northwestern, has joined the staff of the Duluth Clinic.

Dr. I. J. Seibel, of Harvey, N. D., has purchased an apartment house to be used for hospital purposes.

Dr. E. C. Rebman, of Austin, was re-elected county physician for Mower County last week at a salary of \$800.

Dr. E. W. McElligott, of Appleton, and Mrs. Lois Del Caine, of Morris, were married last week. Dr. McElligott is a recent graduate of Rush.

Dr. Guy F. Walker, who graduated from the Medical School of the University of Minnesota, class of '06, has joined the staff of the Dawson Clinic.

The Northwestern Clinic Association of Crookston has been incorporated by Drs. M. O. Op-

pegaard, O. E. Locken, and C. L. Oppegaard of that city.

Minnesota had two major epidemics (of smallpox and infantile paralysis) in 1925, but the state is now free of these diseases and is otherwise in a healthful condition.

Dr. R. C. Webb, of Minneapolis, has been appointed chief surgeon of the Great Northern Railway, to succeed Dr. Harry B. Zimmerman, of St. Paul, who recently resigned.

The Morgan Park Hospital in a suburb of Duluth, conducted for a number of years, has been closed, and its patients sent to St. Mary's and St. Luke's Hospitals in Duluth.

Dr. A. J. McRae, who has been in charge of St. Luke's Hospital of Duluth since 1919, begins work next month as superintendent of the Jackson Memorial Hospital of Miami, Florida.

Dr. L. N. Klove has moved from Wright to Minneapolis, and has offices at 3757 Chicago Ave. Dr. Klove is a graduate of the Medical School of the University of Minnesota, class of '03.

Dr. Richard Bardon, a recent graduate of Northwestern, who has been working with Dr. C. W. More in his hospital in Eveleth, has joined the Duluth Clinic in the Department of Internal Medicine.

A new free Tuberculosis Clinic has been opened at twenty-eighth Ave. So. and Lake St., Minneapolis, with Dr. W. J. Marcle in charge. It will be open evenings to care for people employed during the day.

Dr. Benjamin Neuheiser, a recent graduate of the Medical School of the University of Minnesota, who did his internship work in Duluth, will be associated in practice with Dr. B. P. Wentker, of St. Charles, Mo.

The following were elected members of the staff of the Sacred Heart Hospital of Yankton, S. D., last month: President, Dr. Lottie G. Bigler; vice-president, Dr. S. M. Hohf; secretary-treasurer, Dr. E. M. Morehouse.

Gymnasium work as a health measure is now required of all children in the Deadwood (S. D.) schools. A health survey of the schools has just been made under the supervision of local physicians and dentists and a state nurse.

Dr. D. W. Francis, a recent graduate of the Medical School of the University of Minnesota, who took his internship in the Ancker Hospital of St. Paul and also in Phalen Park Hospital, has located in Morriston for practice.

Dr. S. A. Slater, superintendent of the South-western Minnesota State Tuberculosis Sanatorium, at Worthington, has returned from Saranac Lake, N. Y., where he has been resting for the past three months, and has resumed his work.

Dr. S. Marx White, of Minneapolis, was elected president of the Minnesota State Board of Health at the annual meeting of the Board. Dr. White succeeds Dr. C. L. Schofield, of Benson. Dr. A. J. Chesley was re-elected executive secretary.

The Mower County Medical Society held its annual meeting at Austin last month, when the following officers were elected: President, Dr. A. P. Lommen, Austin; vice-president, Dr. A. F. Henslin, LeRoy; secretary-treasurer, Dr. C. C. Allen, Austin.

The city of Milwaukee, Wis., is seeking a physician to fill the position of medical director of its Emergency Hospital. He will be selected by competitive examination on February 1, and his salary will be \$4,200 and meals for the first year and will increase thereafter.

Dr. W. S. Nickerson has moved from Lonsdale to Faribault, and is occupying the offices of the late Dr. W. N. Thiessen. Dr. Nickerson is a graduate of the Medical School of the University of Minnesota, class of '04, and was formerly city health officer of Fargo, N. D.

Dr. D. R. Jones, formerly county health officer of Penning County, S. D., now doing postgraduate work at Harvard under a fellowship, has been offered the position of epidemiologist of the South Dakota State Board of Health, and will accept it to begin work on June 1.

At the annual meeting of the Rice County Medical Society, held last month in Faribault, the following officers were elected: President, Dr. J. R. Moses, Northfield; vice-president, Dr. S. B. Haessler, Faribault; secretary-treasurer, Dr. C. A. Traeger, Faribault; delegate, Dr. J. W. Warren, Faribault.

At the annual meeting of Yankton (S. D.) District Medical Society after the discussion of a live subject, as noted in our last issue, the following officers were elected: President, Dr. D. S. Kalayian, Parkins; vice-president, Dr. E. M. Stansbury, Vermilion; secretary-treasurer, Dr. J. A. Hohf, Yankton.

At the annual meeting of the North Dakota State Tuberculosis Association, held at Bismarck last week, officers for 1926 were elected as follows: President, Dr. James Grassick, Grand

Forks; vice-president, Dr. Fannie Dunn Quain, Bismarck; secretary, Helen M. Katem, Bismarck; treasurer, Dr. R. S. Towne, Bismarck.

There are two big hospital schemes under way in St. Cloud for 1926. The Benedictine Sisters expect to replace St. Raphael's Hospital building by an up-to-date structure, the plans of which have been drawn by Chicago architects; and the Lutherans of the city and vicinity will renew their effort to collect sufficient funds for a large hospital building.

Dr. Max Seham, of Minneapolis, of the Department of Pediatrics, Medical School of the University of Minnesota, spoke last week before the New England Pediatric Society, at Boston, the Pediatric Division of the Medical Association of New York at New York City, and the Parents and Teachers Association at Rochester, N. Y. He spoke on the subject of "Chronic Fatigue in School Children."

The annual meeting of the Huron (S. D.) Medical Society was held at Huron last month. After a plate dinner the annual reports were read and officers elected for 1926 as follows: President, Dr. R. A. Buchanan, Wessington; vice-president, Dr. H. L. Saylor, Huron; secretary-treasurer, Dr. T. G. Fitzgibbon, Huron; delegate, Dr. O. R. Wright, Huron; censor for three years, Dr. H. D. Sewell, Huron.

At the annual meeting of the Hennepin County Medical Society, held on January 4, the following officers were elected: President, Dr. Frederick A. Erb; first vice-president, Dr. S. R. Maxeiner; second vice-president, Dr. C. O. Maland; two members of the executive committee (for three years),—Drs. E. S. Geist and George Douglas Head; two members of the board of censors (for three years),—Drs. J. Frank Corbett and E. K. Green; two members of the board of trustees (for three years),—Drs. J. W. Bell (re-elected) and Dr. S. Marx White; delegates,—Drs. S. H. Baxter, J. W. Hayes, R. T. LaVake, and J. C. Michael.

The Business Men's League of Albert Lea, on January 5, gave a "Physicians and Surgeons Night." After dinner a complimentary talk was made by the president of the League, and then the meeting was turned over to the medical men with Dr. J. P. von Berg, president of the Freeborn County Medical Society, acting as toastmaster. Several admirable addresses were made by physicians, giving to the public, through the League, more useful information upon the work of physicians (their relation to the public) than can often be found. *The Albert Lea Tribune*, in

its issue of January 7, gives an admirable report (nearly three columns in length) of the meeting, which we wish might be in the hands of every county medical society in this territory.

**PROGRAM OF THE MID-WINTER MEETING
OF THE SIOUX VALLEY MEDICAL
SOCIETY AT SIOUX CITY,
IOWA**

Tuesday, January 19

Dry clinics, given by the afternoon lecturers. Clinics will be given in the Martin Hotel assembly-room.

Afternoon Lectures

- Dr. H. Z. Giffin.....Rochester, Minn.
The Various Blood Dyscrasias: Splenectomy.
- Dr. Floyd Clarke.....Omaha, Nebraska
What Practical Benefit Can Be Derived from Our Present Knowledge Concerning Rickets?
- Dr. A. S. Hamilton.....Minneapolis, Minn.
Sub-acute Combined Degeneration of the Cord in Relation to Pernicious Anemia.

Wednesday, January 20

Dry clinics in the morning session.

Afternoon Lectures

- Dr. Arthur Steindler.....Iowa City, Iowa
- Dr. H. J. Prentiss
Scoliosis; Mechanics, Kinesiology, and Principles of Treatment.
- Dr. Hilding Berglund.....Minneapolis, Minn.
The Management of Chronic Nephritis.
- Dr. J. E. Summers.....Omaha, Nebraska
The Practical Management of Some Types of Acute Intestinal Obstruction.

—R. F. BELLAIRE, M.D.,
Secretary.

Office Room in Fargo, N. D. for Rent

Office room with physician and dentist with laboratory privileges is offered at very reasonable rental in Fargo, N. D. Address 332, care of this office.

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Complete prescription stock and equipment, including shelf bottles and case, if desired. All live stock. Inventory on request. A snap. Address 329, care of this office.

Fine Minneapolis Office to Sublet Mornings

I will sublet my two offices and reception room to the right party mornings. Offices are completely equipped. Telephone and attendants are included. Address 331, care of this office.

Assistant Wanted by a Surgeon

A graduate or experienced nurse who can give anesthetics, do some x-ray and diathermic work, and make herself useful in the hospital. Location less than 100 miles from the Twin Cities. Will pay a good salary with maintenance in the hospital. A desirable and permanent position for a willing and competent worker. Address 107, care of this office.

Wanted

Assistantship or location by well-qualified eye, ear, nose and throat man, good refractionist and operator. Married. Shriner. Excellent references. Address 101, care of this office.

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By a young woman who has had three years in college, two years nursing, can do routine laboratory work, typing, etc. Have had office experience. Will accept very moderate wages. Address 338, care of this office.

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A DRY CLINIC*

By A. E. BENJAMIN, M.D.

MINNEAPOLIS, MINNESOTA

It is rather embarrassing to appear after such a fine clinician as you have just heard, and I am further handicapped by my dentist, who placed an uncomfortable apparatus in my mouth; however, I have a series of patients to present: Dr. Cottam will read the histories of the first group which I will take up, that of goiters:

CASE 1.—This woman is twenty-six years old, married, a housewife. She has had one child, premature, seven months, which died at birth. There have been no other pregnancies. The family history is negative. She had the ordinary diseases of childhood, and an appendectomy in 1921, a clean case. She noticed an enlargement in the neck at the age of fifteen, just preceding the establishment of her menses. Her periods have always been irregular and the flow scanty and of two days' duration. About six years ago she noticed that she was becoming very nervous, tired easily and had difficulty in going up stairs. Her heart would palpitate. She also noticed that she perspired freely, especially the palms, from apparently no cause. She has always been constipated. Her appetite is good, and she sleeps well. There is some weakness of the quadriceps extensor.

The urinalysis shows a slight trace of albumin; otherwise it is negative. The basal metabolic rate is +50.

Examination shows the conjunctivæ congested and pronounced exophthalmos. She is very nervous. Her fingers tremble, the reflexes are normal, the co-ordination imperfect. The heart is rapid with harsh second sounds. The thyroid is irregularly enlarged, lobular, and about twice the normal size. Graefe's sign is negative; Stellwag's, moderate.

We have made a diagnosis of toxic exophthalmic goiter, with possibly small colloid cysts and hyperplasia.

CASE 2.—This woman is thirty-three years old, married, a housewife. She had the ordinary diseases of childhood. Physical examination eight years ago was entirely negative. Her menses began at the age of fifteen. Her periods have always been regular, of five days' duration, profuse flow but no pain. She has been married five years. There has been one pregnancy, with normal delivery.

Early in February, 1925, about one month before the expected date of her confinement, it was noticed that the patient had an enlarged thyroid, also that she was extremely nervous. At that time the pulse was 120; and the blood pressure was 160 systolic, 92 diastolic. She had noticed that she perspired freely and that her heart palpitated. She was placed in bed for one week. The pulse and blood pressure dropped to normal but when she was permitted to get up the pulse again rose. On March 4 she was sent to the hospital and put on small doses of Lugol's solution. On March 5 she went into labor and was delivered normally. She has been kept in bed most of the time since the delivery and has been in bed continuously for the past three weeks. Three weeks ago she was given 15 minims of Lugol's solution three times daily for one week, then 7 minims for one week. She has now had none for one week. Her basal metabolism before being put to bed was +60 and has now dropped to +45. The pulse while she was in bed was around 90 to 100.

The urinalysis is negative. Her appetite, bowels, and sleep are good. She is very nervous; her pulse is 160. Co-ordination is about normal, the reflexes are exaggerated. Her eyes show considerable exophthalmos. The right lobe of the thyroid is irregularly enlarged, lobular, and three times its normal size. The left is enlarged to about twice

*Presented at the forty-fourth annual meeting of the South Dakota State Medical Association held at Sioux Falls, S. D., May 21 and 22, 1925.

its normal size. The blood pressure at present is 126 systolic and 78 diastolic.

Our diagnosis is exophthalmic goiter.

CASE 3.—This young man is twenty-one years old, single, an elevator operator. He first began to notice enlargement of the neck two or three years ago, but it did not begin to trouble him until recently. He then consulted a physician, who prescribed tincture of iodine, one drop three times daily. Since then he has felt much better, but the thyroid remains large. He is in good condition otherwise and gives no history of previous serious disease.

DR. BENJAMIN: In the first case I think you could all make the diagnosis even from the back row. Some of the symptoms in these cases come on very suddenly, and it is a question what produces the trouble. We know that fright or some burden which the heart has put upon it in these cases of exophthalmic goiter will suddenly produce an attack, especially if there is any infection. When the patients first come in we can make a snap diagnosis but must then go into the case more thoroughly to see if there is some associated disease. This patient has the tremor, the sweating, and the other signs that are well known. She has an enlargement of both lobes. The right lobe is a little hard. In some the thyroid may be soft. It depends upon whether it is just a simple, adolescent goiter or whether the disease has progressed with nodular or hardened areas. There may be a breaking down of the walls of the alveoli, with the formation of cysts. There seems to be no particular cyst on this side, just a small nodule. In some cases the gland is much enlarged.

I think there is no occasion to go into the diagnosis of this case any further. You can see that something must be done for this type of goiter. The basal metabolic rate is +50. The question is what shall we do? Shall we operate? Shall we resect or shall we ligate? We do not wish to operate in these cases when the rate is as high as this. I think the patients should be put into a hospital and kept quiet until the rate is down to +30, if possible. Then we can go ahead and do a resection. Removing all of the interior of the gland and ligating the poles is a very quick method of operating, sometimes as quick as to ligate.

The various methods of treating the cases by Lugol's solution, rest, and special diet, you all know about, but keeping these patients quiet I think is one of the most essential things. There are various complications, as you know. The kidneys are somewhat affected in this case, and the heart is in poor condition; nevertheless when we can get the metabolic rate down to +30 I

think we can safely go ahead with the resection. If we cannot do that, I think it would be best to ligate, first one side, and then the other later.

Some of the patients have myxedema in the terminal stage and that is to be considered. The possibility of the removal of too much of the gland must also be taken into account, as myxedema occurs following the removal of an excess of gland tissue.

This second patient says it is hard for her to step up. I am glad she mentioned that. Very often the muscles of the legs are weak, and it is difficult for these patients to raise the legs. This woman, you will remember, is 33 years of age, and she first noticed her trouble in February of this year. She says she had not been under unusual strain, but she was pregnant, and that may have been one of the exciting causes. During pregnancy acute symptoms sometimes arise, and these patients get extremely nervous. This being the first child, this woman probably approached that time with great anxiety. She had tonsillitis in childhood. When the load of an infected tooth or tonsil is added to the condition we have in the thyroid, the symptoms are exaggerated. Her basal metabolism was +60 and dropped to +45. Her pulse has been very rapid and the heart has pounded a great deal. Her skin is moist, and she perspires very easily. She does not have all of the common signs we see, but she has more tremor and is more toxic than the preceding case. This case we would have to approach with more caution and get the basal metabolism lower before we would attempt to do anything surgical. The right lobe is the one that is chiefly enlarged. The lobes are not always symmetrical.

In this case we could perhaps do a ligation of the right lobe and later the left, or let her go without any particular interference at this time. In the substernal goiter some of these patients have goiter tissue some distance away from the main growth. If we could trace these sections of goiter and know just how much to remove, we could help the patients much more or be more certain of the results.

This third patient is twenty-one and does not know he has a goiter except that he needs a little larger collar than he wore a few years ago. The goiter is soft; there are no hard nodular masses. It is a sort of diffuse adenomatous condition. These cases should be treated, otherwise many of them will go on to further development. Some do not develop any further symptoms. For preventive treatment we give sodium iodide, five grains once a day for ten days, twice a year, or

iodine is to be recommended in chocolate-tablet form. It would have been better to have started earlier in this case by giving the boy iodine in the right proportion. You know we can now obtain salt with a sufficient amount of iodine. It is a question whether we can get this thyroid down to a normal size and run no risk of further trouble. We have not been able to do this successfully in every case. These cases should be kept under observation and not be allowed to develop hyperthyroidism. If a patient is told that he must come in so often for examination, or at any time when he gets easily excited and does not feel well, it is an excellent plan. We should have the metabolic rate taken. We can easily resect the glands in this form of the disease, and get beautiful results. We very rarely have to operate a second time when done early if this is done in the way I will explain.

The Kocher incision is not used any more because of the scarring. The thing to do is to expose the goiter thoroughly. I think that has been the trouble; most operators make this work hard. Some have great difficulty in doing a goiter operation, but the work can be made just as simple as any other operation, and there is no need of trouble with any of them, except the substernal or some of the very toxic or exophthalmic cases.

After making the collar incision under local anesthesia, the sternohyoid and sternothyroid muscles are usually severed in this way, but making an incision on each side and running a flat forceps that I have made especially for the purpose that can clamp the muscles and then these muscles are cut between the clamps and turned out of the way. (Fig. 1.) All the blood vessels are thus clamped, and you have a good wide field. The other side is treated similarly. There are four forceps to control all the blood supply except the bleeding vessels in the skin, which are ligated. I usually take a large round curved

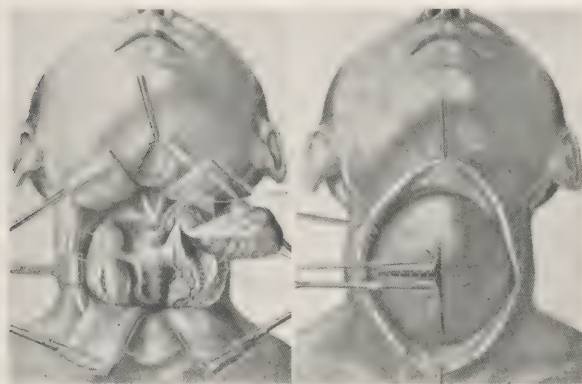


Fig. 1. Ligating and resecting the thyroid.

Fig. 2. Closing muscles and fascia.

needle with plain double No. 1 catgut and pass it around the blood supply including some of the gland tissue at the poles and tie, then dissect out the diseased portion of the gland, leaving most of the capsule. (Fig. 2.) I avoid the posterior laryngeal nerve and all the important blood vessels in the area, and have the capsule for support and enough of the glandular structure to provide a proper function afterward. The other sutures are passed over and over in this manner (indicating). By this method there is little or no hemorrhage. It is practically a bloodless operation in the average case. The same thing is done on the opposite lobe. If one leaves the capsule the sutures hold. If not, they are likely to pull out or cut through the gland structure. The superficial jugular must be tied at this point (indicating). If this is done there is little chance of subsequent hemorrhage. This is a very simple way to operate in these cases, and the results are excellent.

We will now take up the next group of patients, and Dr. Cottam will read the histories for us.

CASE 4.—The first history which I shall read is that of a patient whom I expected to have here this morning, but he was unable to come.

He is fifty-seven years old, married, and the father of two children. He has no history of venereal disease. Five weeks ago he began to be dizzy and to have irritability of the bladder. His urine is negative, but after urination he passes some blood.

Examination shows that the prostate is small and hard except for a small area in the right lobe.

Urinalysis gives an acid reaction, albumin 3+, sugar negative. Microscopic examination shows much pus and blood.

We believe this is probably a cancer of the prostate.

CASE 5.—This man is sixty-seven years old, married, an engineer. For two and one-half years he has complained of frequent, painful urination, with scanty urine. This has gradually been getting worse, and he has to get up about every hour and a half at night. He passed just two ounces when he came to my office, and was suffering in voiding.

Examination showed that the prostate was three times its normal size, soft, smooth over the entire mass, and very tender. A catheter was passed and 26 ounces of urine were drained off, the bladder was irrigated with boric acid and 10 per cent silver nitrate. On other occasions he has had residual urine amounting to 17 ounces, 14 ounces, 12 ounces, 8, and 7 ounces, respectively. He also has an umbilical hernia, and his teeth are in bad condition. He has had one attack of tonsillitis. Last Thursday he had an attack of orchitis. His blood pressure is 145 systolic, 100 diastolic.

Examination of the blood shows 8,400 leucocytes. Urinalysis gives a specific gravity of 1.025, an acid reaction, a faint trace of albumin, and sugar is negative. Microscopically a very few pus cells are found.

DR. BENJAMIN: This patient has been a very vigorous man. He has hunted buffalo and Indians, but he cannot conquer this condition within himself. We all have to approach this time of life after we have been able to meet everything that came along without failure, but the last thing is too much. A patient said to me the other day that he had never been sick before, and he could not understand why he had to have a doctor now. It is too bad; a valuable man who has been of great help to the community loses his usefulness and has to suffer with a disease which, in some instances, might have been prevented. That idea, I think, we should inculcate in the minds of the laity, as well as of the profession. That is the reason why we are stressing periodic health examinations throughout the country. In our own local community we are endeavoring to get people to the doctors to be examined to see if we cannot prevent some of these diseases that cause so much damage to the human race.

This man has had trouble for two and one-half years. Something happened which produced an acute obstruction, and that is what these patients usually come for. They have a little painful urination or are troubled with getting up at night, and then the flow stops, and the physician is called. Sometimes there is inflammation, sometimes swelling, and sometimes infection. Infection does not happen so often to-day, because physicians see that there is sufficient drainage. We need drainage of our tissues just as the farmer needs drainage of his land. That principle must be followed out in the treatment of diseased tissue as much as in agriculture.

This man probably had infection through the blood stream. He had diseased teeth or tonsils or perhaps sinuses, which gradually led to a more pronounced infection. While he has not yet had much infection of the bladder, that will become pronounced unless we establish drainage.

The diagnosis is enlarged prostate. Which lobe is it? Sometimes a little swelling will cause the obstruction. Washing the bladder and taking care of the patient generally, putting him on a special diet, will help him for a time. There comes a time, however, when we have to do something surgical in most of these cases. There is an adenomatous growth or hypertrophy of the gland, and some part of the gland must be removed. The punch operation, taking out a section, or by local and caudal anesthesia, a prostatectomy, can be done.

When should we operate on these cases, immediately or late? Should we do it in one or

two operations? Very often the obstruction leads to dilatation of the ureters and hydronephrosis, a backing up of urine into the kidneys, which makes the operation very dangerous. I like the one-stage operation for these cases after getting the kidneys in as good condition as possible by means of the indwelling catheter. We should get the patient as nearly normal as possible before attempting the operation. I prefer doing the suprapubic operation, if possible. I have a third assistant standing between the thighs, lifting the prostate, by means of the finger in the rectum and in most instances the operation is easily done. (Fig. 3.) It is only necessary to nick



Fig. 3. Prostatectomy.—Second assistant's finger in the rectum for support. (After Deaver.)

the capsule, and go in with the finger and in from three to five minutes the prostatic gland often can be thoroughly enucleated. Many men prefer the punch operation as it is less work, but I think the enucleation gives better results. It does not interfere with the seminal vesicles if it is carefully done. Very often these operations have been done in a makeshift manner. The tumors have been enucleated in the same way as a fibroid from the uterus. We can often remove a fibroid without difficulty, but in the prostate it is difficult to go in and sew up the capsule or fasten it down to fill the space as it should be; when done there is not much danger of hemorrhage. If you cannot do this, a pledget of gauze placed in the wound and fastened to a linen thread can be removed through the wound later. I usually pass a suture through the eye of the urethral catheter and bring this out through the large abdominal tube and anchor. (Fig. 4.) In this way one can wash the bladder much better, and the catheter is retained with great comfort. Later the suprapubic drain can be removed entirely. These cases

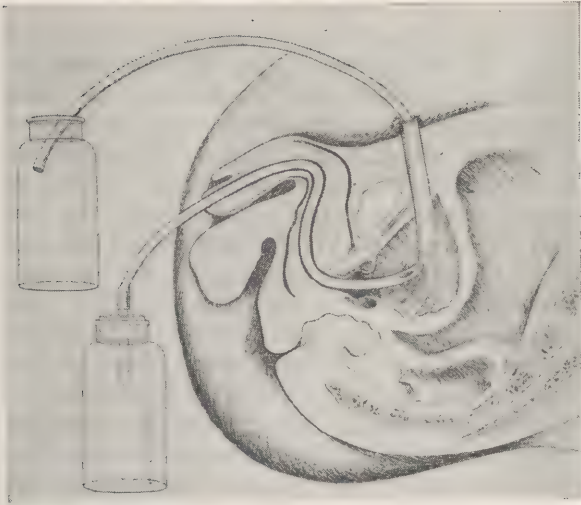


Fig. 4. Prostatectomy.—Drainage tube and catheter in position. (Adopted from Cleveland.)

ordinarily will make satisfactory progress if we follow the known laws of surgery.

The other case was a milder one but a hard type of prostate. Sometimes they are hard and at times lobulated; the middle lobe may do all the damage. I have seen many of them abscessed. One physician, a man aged seventy-six, whom I operated upon had made his will and had given up his practice. He was through and expected to die. Upon examination I found the right lobe of the prostate soft. We could not find much evidence of infection, but I told him I thought he had an abscess in that area which was causing the trouble. We got him in good condition and under local anesthesia removed the prostate. Right in the center of the right lobe was an abscess which contained one-half dram of pus. He had a chill which lasted for a few minutes, his heart troubled him for days, but he made a perfect recovery, married, and went back into practice for eight years longer. If we had not removed the prostate he certainly would have died.

Of course, malignancy of the prostate must be borne in mind. How can we tell? We cannot always make a diagnosis. I have seen unsatisfactory results from the use of radium, particularly in the needle method of application. In a certain percentage of cases the tissues are infected, and I do not like to use radium or *x*-ray in infected cases. Consequently, I think the cautery knife is better where applicable.

The first man whose history was read has a small, hard prostate, with just one area that is soft. He has not had much pus or blood until a few days ago, and this followed the use of a sound. This was not the direct cause of it but

was the exciting cause. Is there a small abscess? Time will tell.

The seminal vesicles are sometimes affected previous to an operation and sometimes subsequently. Diathermy and massage and many things have been used in such a complication. Massaging the vesicles probably accomplishes as much as anything else. Diathermy is in the experimental stage; I have not given much faith to it. Deep *x*-ray therapy in some cases, especially of the carcinomatous type, will often relieve the pain. The treatment is rather symptomatic and problematic, and the prognosis is rather doubtful. If it is possible to remove a piece of the growth for examination that may be the thing to do when in doubt.

Diverticula occur in many of these cases, but an operation on the diverticula may be of doubtful value. If there is only one diverticulum we may be able to obtain results, but if they are multiple I think the results are doubtful.

I shall next show you a couple of gall-bladder cases, after Dr. Cottam has given us the histories.

CASE 6.—This woman is forty-four years old. She had an appendectomy in 1905. Her left kidney was drained in 1916, and eight days later she underwent a cholecystectomy. She has never felt entirely well since. She suffers from headaches, and she vomited bile, at first once or twice a year, but recently this has occurred more frequently. She recently had a so-called non-surgical drainage of the gall-bladder, with temporary relief. She loses weight temporarily, but soon regains the lost flesh. Three years ago the menopause began but she had one menstruation about four months ago.

Examination shows that the tonsils and teeth are in bad condition. Her blood pressure is 180 systolic, 120 diastolic. She has a healed appendectomy scar and a gall-bladder scar, both strong and free from hernia. The left kidney incision is fully healed.

Examination of the blood shows 8,600 leucocytes, 5,700,000 erythrocytes. The urine is highly acid, sugar negative, albumin 3+. Microscopically there is much pus and blood. She improved somewhat under the administration of alkalies, but she still has pain in the gall-bladder region.

CASE 7.—This woman is forty-eight years old. She has always been in good health except for slight attacks of rheumatism during the last ten years. In 1920 she began to have occasional vomiting spells and had to be careful regarding her diet, otherwise she would have symptoms of indigestion. She has never had any gall-stone colic. In 1920 she also began to have her menstrual periods every three weeks with profuse flow. In October, 1923, she had a subtotal hysterectomy for removal of a fibroid tumor of the uterus, the size of a grapefruit. At the time of this operation her gall-bladder was palpated and found to contain many small stones. The appendix was not removed. Since that time she has had more frequent vomiting spells, which come on suddenly, with little or no pain and

last only a few moments. She has daily attacks of pain in the epigastric region. These attacks begin at two or three o'clock in the afternoon, radiate to the right in the region of the gall-bladder, up to the right shoulder, and through the back. They last for about two hours, and she occasionally has to take codeine for this pain. She has difficulty in swallowing at times, especially meat and cold water, and the food is returned apparently without having passed into the stomach. At the time of the difficulty in swallowing she has pain in the region of the stomach and esophagus.

She weighs 194 pounds. Her blood pressure is 126 systolic, 75 diastolic. Pyorrhea is present in the lower teeth, and she has pain to pressure over the stomach and gall-bladder.

DR. BENJAMIN: I think a case like this first one is interesting to any practitioner. This woman has tonsils that are diseased and some bad teeth. This case is interesting to the dentist, as well as the laryngologist. She has bladder trouble and gall-bladder symptoms; at least she has had a good deal of pain in the gall-bladder area. She has had one Israel incision on the right side which was made to expose the kidney, and she had an operation for removal of the gall-bladder. She unquestionably needed these operations, but it is unfortunate that she still has much trouble. Her main symptoms do not point to kidney trouble. Is the kidney trouble due to the teeth or the tonsils? I think she should be studied thoroughly before another operation is advocated; this woman has not had all the necessary examinations yet. Draining a kidney that is infected does a great deal of good, providing we have eliminated all the foci of infection. I have had much value from simply splitting a kidney and putting in a drain, but that is not called for often. I have found in numerous cases that washing the pelvis of the kidney has been of great benefit.

Is the pain in the right side in the gall-bladder area due to adhesions, an ulcer, or obstruction of the alimentary canal in any way? The mere fact that she has a pain on the right side with a practically normal leucocyte count shows that she is not getting any particular stomach disturbance from the infection that is present in the kidney and bladder. It must be due to some local condition, but whether it is due to adhesions is a question. I have seen a number of these cases, as all of you have, where the gall-bladder has been removed and these symptoms have persisted.

What can we do to overcome them? If they are due to adhesions what can surgery do in the future to prevent this condition arising? I have labored over that problem a good deal and have not solved it, by any means, but believe where

there is quite a wide area of operation we should endeavor to leave as few raw surfaces as possible. We should cover them with omentum, and in some instances I have used a strip of rubber dam temporarily to lessen the retention of intra-abdominal exudate following an operation and to keep the raw surface protected. I think we should wash the stomach out, change the position of the patient, lift the head of the bed, turn from one side to the other, and keep the intra-abdominal tension at the lowest possible point. Atropin lessens the spasm of the pylorus to some extent, and washing the stomach three or four times a day, or every two hours if necessary, is of much assistance. We can put in a duodenal tube and let the bile flow through the tube from the duodenum. We can feed them through the tube as well. Gastric lavage and emptying the bowels will often give relief. Pituirrin can be used to relieve the ileus. Turning the patient over on the stomach will give better drainage and permit better peristaltic action. We must endeavor to prevent the distention by all known methods.

Some of the cases are due to obstruction of the pylorus or the small intestine or hepatic flexure of the colon from adhesions, and the patients have the pain in the vicinity of the adhesions. If we operate on a case of this kind, knowing that there is still focal infection, we do not get the results we should. I remember one patient on whom I had to operate four times, and I did not get the expected result until I had all of the teeth removed. I think we cannot make a definite diagnosis in this case and cannot outline the treatment until we have more definite information.

In the second patient the diagnosis is gall-stones. She has her pain at about two o'clock in the afternoon. It does not make any difference what she eats or drinks. She is well-nourished, but many of these patients are poorly nourished. She says there is sometimes difficulty in swallowing cold water and meat.

What else is the matter with this woman except gall-stones? I would suspect a cardiospasm. A large percentage of these individuals will have more than one trouble. I do not think there is any obstruction, but just a spasm which can be treated by bougies.

Her gall-bladder should be operated upon and whether it should be removed or not depends upon the condition present and upon the operator's experience and judgment. It is usually taken out and properly so, but we cannot always hope to get rid of all the disease by removing

the gall-bladder. The patient may have a hepatitis. In taking out the gall-bladder we do not remove any small stones that might be in the hepatic ducts. They occasionally have pancreatitis and need drainage completely to clear up the trouble. I think we probably get rid of more disease by removing the gall-bladder than by drainage, but that question is still under debate. Whether we shall come to some definite and generally accepted opinion in the future I cannot say, but I think this woman will have her gall-bladder removed as soon as she can arrange to do so.

Dr. Cottam will present the next case.

CASE 8.—This woman is forty-three years old. Her father is living; her mother died of pneumonia. One sister is living and in good health. She is married and the mother of seven children. She has always been in good health. In March, 1924, the menstrual periods began to come every two weeks, and she would flow for about one week. She began to lose strength and became quite anemic. She entered the hospital May 12, 1924, and a diagnosis of fibroid tumor of the uterus was made. Her hemoglobin was 30 per cent. On May 19, 1924, we inserted 50 mg. of radium into the uterus for twenty-four hours. This checked the hemorrhage for two months, when it began as before. She obtains some relief by keeping very quiet or staying in bed.

On March 18, 1925, she again was brought to the hospital. At that time the hemoglobin was 45 per cent; erythrocytes, 2,760,000. It was found that the tumor of the uterus had become quite large, and she was returned home for treatment preparatory to operation. At the present time the hemoglobin is 60 per cent; erythrocytes, 3,420,000; leucocytes, 8,000. Her blood pressure is 170 systolic, 90 diastolic. The urinalysis is negative. She now flows for nine days every two weeks, and part of the apparently degenerated material is flocculent in character.

Upon examination there is pain to pressure in the gall-bladder area. A tumor is felt in the lower abdomen, extending over half way to the umbilicus. There are protruding hemorrhoids. The uterus is enlarged, the right half extending over into the right pelvis, the left half extending higher into the abdomen. The enlargement is not perfectly symmetrical, is probably subperitoneal, and the growth is probably an interstitial fibromyoma with some degeneration.

DR. BENJAMIN: These cases are under debate at present. Some roentgenologists believe in treating them by *x*-ray and some men prefer radium. Of course, they have a right to their opinion. The diagnosis is fibromyoma, and I think there is nothing malignant about this case. There are three types: the subserous, the interstitial, and the submucous. The subserous cause little or no trouble. They sooner or later become pedunculated, and unless they press upon the tis-

sues, or at childbirth interfere with the delivery of the child, little attention is paid to them. Some of them become detached from the uterus and attach themselves to other tissues in the abdomen. We often find two or three forms in the same case. When they are situated close to the mucosa there may be a degeneration of the tumors which are still supplied with blood, and hemorrhage occurs. As long as they are subserous they do not cause the extreme hemorrhage unless this occurs from pressure or something of that sort.

This patient flows about every two weeks for nine days at a time. Something must be done. Shall we use radium or *x*-ray, or shall we operate? We all have our preferences and prejudices. I have seen patients treated by all three methods, and especially have I noted the results from *x*-ray and radium, but I have yet to see a case where I would recommend in preference *x*-ray or radium as the final treatment. We do not know all about radium or *x*-ray yet, but surgery has been progressing for many years, and we know what results we can obtain by surgical methods. If the patients are in good general condition, with the kidneys and heart in good shape, an operation can be done under caudal anesthesia and local, or under gas and ether, with no danger from the anesthetic. The operation can be done very quickly, and there will be no danger of degenerative changes, as does sometimes happen following radium and *x*-ray. It is best, I think, to do a hysterectomy. If you are sure it will not develop carcinoma you can leave the cervix, but I like to remove all the mucosa from the cervical canal. If necessary, I cauterize it from below, and this overcomes much of that danger. If there is any exudate in the region of the stump, the plain catgut sutures that are used soon give way and the exudate passes into the vagina. In closing, the tissues should be put in such position that the bladder and broad ligaments are put in the proper relationship. Some of these patients complain of bladder symptoms from prolapse afterwards. Do not cut the round ligaments off short so that they cannot be used to stretch them over as a final covering and support and leave no raw surfaces.

I would say that as soon as this patient is in good general condition, when her red blood count is up, her alimentary canal in good condition, and perhaps her weight reduced somewhat to make her a better risk and to get the abdomen flattened out, she should be operated on.

MENTAL HYGIENE IN ITS RELATION TO THE PRACTICE OF MEDICINE*

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There is a rapidly growing literature on the need and value of mental hygiene at all ages and in all walks of life. But, notwithstanding its rapid advance many, even to-day, believe it deals largely with the care and treatment of the insane and the epileptic. This, although a part, is a very small part of its field. By far the broader and more important aspect of mental hygiene is its relation to preventive medicine, that there may not only be fewer "nervous breakdowns," but that so-called normal persons may lead still more efficient lives. It is with this aspect of the subject that this paper deals.

Mental hygiene can advantageously be applied to every phase of human existence. The ability of an individual to satisfactorily adapt himself to his associates and environment depends on many closely related factors: heredity; early childhood associations, including the mental atmosphere in the home; the trying period of puberty and adolescence; factors in the environment in which he finds himself; and, of course, physical health, for the physical makeup of the individual is the foundation of his personality. Heredity is important, for many are born with an inherently weak nervous system, interfering with the normal growth of the instinctive and emotional life. However, regardless of the importance of heredity, environment, especially early environment, is responsible in a certain proportion of cases for unhealthy methods of dealing with mental problems. Persons who, as children, were brought up in an atmosphere of repression, exposed to various unhealthy moods of their parents, whose normal but childish exuberance or curiosity was repeatedly suppressed, who were punished unjustly or out of all proportion to their actions, often because it gave a parent the opportunity of relieving himself or herself of some mental irritation of his or her own, and whose desires, ambitions, and ideals were not understood or were sarcastically criticized—these persons will have their characters materially affected, and their insight into their own problems later in life will be colored by such early experiences.

Proper mental guidance should continue through puberty and adolescence, for "adolescence that

occurs without stress and strain is too unusual to be called normal."¹ At this stage of development the ability of adjustment is put to the severest test. This is the period when the habits and tastes of a child are being replaced by those of an adult, when newly awakened desires and interests arise, often so rapidly that they are almost overwhelming. Handicapped, not only by lack of knowledge and inexperience, but also often by early environmental factors, the adolescent must face and must adjust himself to these new problems. At this stage youth needs encouragement to meet the chaos of his new world. Ridicule and tyrannical authority will only undermine his confidence in himself. His thoughts and actions should be guided indirectly and he should be helped to face honestly his numerous problems, such as sex, feelings of inferiority, and the like.

The relative unimportance of mental deficiency in conduct disorders is shown by a recent survey² of juvenile delinquents, stealing and sex delinquency being the two outstanding behavior difficulties. It was found that only 8.3 per cent were definitely feeble-minded, and two out of three had an intelligence quotient of 80 or over. The main factors entering into these conduct disorders were mental conflicts, mental maladjustments, emotional complexes, unhealthy mental imagery, bad home influences, and various physical disorders. Approximately 80 per cent of these children showed some physical defect, enlarged thyroids, heart conditions, diseased tonsils, and malnutrition being the most common. It is further interesting to note that the most important influence in the lives of these children were, not the material conditions in their homes, but the personalities of the people the children constantly came in contact with.

Although, from the standpoint of preventive medicine, mental hygiene has its greatest opportunity in childhood, the proper understanding of human behavior will explain and aid in modifying many of the symptoms and reactions seen in "normal" adults.

Mental health and physical health are so essentially interdependent that they cannot be considered separately. The integrity of the various internal organs has much to do with mental

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health. We, as physicians, may give our patients detailed physical examinations, paying particular attention to that branch in medicine in which we are especially interested, but are we not prone to neglect the more comprehensive survey of the individual as a whole? Such a survey includes an investigation of the environment and the patient's ability to adjust himself properly to this environment. The increasing complexity of our social organization and economic problems is such that an ever-increasing number require help to keep both physically and mentally well.

The need of a complete survey of a patient is generally admitted, but in such a survey the consideration or investigation of a patient's mental conflicts is often overlooked or, if recognized, is dealt with in a superficial way. Patients offering such symptoms as nervousness, tachycardia, indigestion, general pains, insomnia, and numerous other complaints are often merely listed as neurasthenics or neurotics, when no physical basis for their troubles can be demonstrated. Not infrequently they are told there is nothing the matter with them, that they are just "nervous," and are advised to "forget it." These patients know better. They know something is wrong somewhere, and in the majority of cases they try to find an explanation for their symptoms on the physical or physiological level, as, unfortunately, most people feel ashamed to admit a mental trouble. A gastric ulcer, pneumonia, or a broken leg is no reflection on an individual, but chaotic thoughts, emotional disturbances, or fear of losing one's mind is more or less disgraceful. That such an attitude toward mental disorders is quite prevalent is shown from the answers to a questionnaire³ sent to groups of business men, clergymen, farmers, housewives, laborers, lawyers, nurses, physicians, professors, students, school superintendents, and teachers. Fifty per cent of these considered mental disease an unqualified disgrace, and 80 per cent would attempt to keep it secret if they felt their minds were giving away. Over 40 per cent considered that there was a distinct line that separated the mentally abnormal from the normal, and only 38 per cent thought the occurrence of mental disorder preventable. Of the seventeen out of twenty-five physicians who answered, two doctors thought it a disgrace to be mentally ill, twelve recognized the need for a program of education in mental hygiene, but only three expressed a willingness to co-operate in such a program.

In view of the fact that physical health and mental health are so closely related and so dependent, one on the other, the physician, whether

a general practitioner or a specialist, should investigate, at least to some extent, all of the possible etiological facts in a case. Some organic cause alone will explain the symptoms of certain cases. In others there are both physical and mental factors, and in still others maladjustments or impossible situations will explain the patient's difficulty. Even in the clear-cut organic cases mental health is important. It is not uncommon to see patients who have had their illness so impressed upon them that it occupies their thoughts out of all proportion to its real seriousness.

The following case illustrates this point:

A successful business man of middle age was found, during a routine examination, to have a positive Wassermann without any clinical manifestations of syphilis. The Wassermann has continued positive for seven years, notwithstanding vigorous treatment. He appears to be one of the Wassermann-fast individuals, but he has never developed any further evidence of the infection. His main trouble at present is his constant fear of his laboratory-diagnosed disease. He is continually analyzing every odd sensation and interpreting it in terms of syphilis. He fears for his future mental and physical health and this state of mind interferes with his efficiency in business. He becomes panic-stricken three or four times a year, and each time requires a careful checking over and continued reassurance that he is not developing some of the more horrible manifestations of syphilis.

The next case, which shows a not unusual difficulty of the adolescent period is that of a University student, twenty years of age. He complained of fatigue and "spasm." He had been studying very hard and for two weeks felt tired. Upon returning home one evening he felt queer, then faint. He lay down on the floor and had what was described as a spasm. His mother stated that he appeared to be conscious, but could not speak. His muscles were set, and he moved his arms and hands to some extent. These movements were not purposeful. Tears flowed from his eyes on account of severe pain, but he could not indicate where the pain was. This state of affairs kept up for about an hour, when he relaxed and then began talking continuously, but incoherently, apparently about his studies. Two hours later he went to sleep. The following morning he was quiet, replying only to questions, and his memory for any past events was quite poor. A general physical and neurological examination showed nothing abnormal. He was cheerful and co-operative and said he had no cause for worry. On being questioned he re-

membered nothing about his actions of the night before, and could not remember many of the events of the previous summer. He stated that his mind felt confused. Upon further investigation it was found that he had been brought up largely by his mother, to whom he was very close, as his parents had separated. His mother had had a nervous breakdown two years previously. He had always been a conscientious, self-contained boy, with a rather serious outlook on life. He had earned the money to put him through the University. During the past year he had worked thirty-one hours a week, and, in addition, had studied four hours a night at home. His only ambition recently was to be a wonderful engineer. Upon still further investigation it was found that the patient had been more or less a home boy, had never been especially interested in girls, and did not care to associate with boys or girls of whom he did not approve. His mother had done everything with him,—hunted, camped, and the like; and the patient appreciated this and preferred her company to that of others. In high school he became interested in a girl. Later, as she did not come up to his ideals, he stopped going with her, and a little later became engaged to another girl. This second girl urged him to go to work so that they might be married sooner, but he felt he should finish his University education first. He had never been away from the influence of his mother, who had even moved to the University town that she might make a home for him there. Recently he felt he must get away from home influence that he might prove to his own satisfaction his capability of carrying his own load. The wish to test himself, modified by doubts of his ability to meet the responsibilities of the world, the fear of hurting his mother's feelings by breaking away, the conflict between his engagement and his need of an education which stimulated him to intensive study—these were more than he could adjust himself to. The hysterical attack followed. All symptoms disappeared, his memory returned, and he improved under proper advice to both him and his mother.

The following case is illustrative of that type in which both a physical and a mental factor play a part. A woman of thirty-three, married eleven years, complained of nervousness. She had always been well and strong, but had had a thyroidectomy six years ago, advised at that time because the patient was in good physical condition, although apparently the symptoms of hyperthyroidism were not particularly marked. For the last four years the patient has complained of sudden attacks of dizziness, with pains in her

temporal regions, sore spots in the scalp, general fatigue, attacks of partial numbness of the arms and legs, and difficulty in concentrating. Physical examination was negative except for three abscessed teeth, a basal metabolic rate of minus fifteen, and chronic constipation. Upon further questioning it was elicited that the patient was not very happy. She was limited in her financial expenditures. Her daily life was filled with the routine of looking after a small house, getting the children off to school, and supervising them on their return. She had little opportunity of going out, as her husband is a traveling man who is away during the week, and she did not feel that she could leave the children alone. When her husband was home he was tired and did not wish to be disturbed. In his business he drove an automobile continually, and therefore did not want to motor on week-ends. His wife never had any opportunity to motor except week-ends. The patient was tired of being on the "treadmill," plodding along at the same rate with always the same vista ahead of her. Underfunction of her thyroid, abscessed teeth, chronic constipation, and her discontent with her mode of life must all be taken into consideration in her treatment.

The explanation for the symptoms and actions of the following case becomes perfectly clear, when the emotional life of the patient is inquired into.

This was a woman thirty-five years of age, who had been married for twelve years. She had appeared to be perfectly happy, had one child in whom she showed the normal mother's interest, and had taken, particularly during the past two years, an active part in the social life of her town. Apparently quite suddenly she changed. She acted queerly, lost interest in her home, repeatedly re-arranged the furniture, and avoided her husband. She became underweight, slept little, and then, without any warning, informed her husband that she was no longer interested in him and wished to live with another man, who was of an entirely different type and whose reputation was not of the best. It was immediately thought that the patient was insane. Her physical and neurological examination showed no evidence of organic disease. The explanation of her actions was evident when the following facts were elicited: She had been brought up very strictly and rather unsympathetically by her mother who had separated from her father. Her father had been more or less of a Bohemian, and rather unstable in character, but she adored and idealized him. She had not

been allowed to attend any dances or associate with other children during her school life and so had few friends and often felt that she was not understood. She had graduated from high school at seventeen and immediately took a teaching position in a nearby town. For the first time she was free of restraint, and the pendulum swung far in the opposite direction. As a result she got into trouble with a boy one year her junior. This became more or less public knowledge, and her mother, instead of handling the situation properly, made her feel that she was not to be trusted, that she needed constant supervision, and that she was a weak character like her father. She was sent to an aunt who was in charge of an old ladies' home that she might be carefully watched and guarded against temptation, and the next year she spent in this drab environment. Later she returned home but felt that she was not really wanted. She then began to correspond with a young man she had known for a number of years. They became engaged without seeing much of each other. The patient's mother approved of this but, against the girl's wishes, insisted that her future husband should not be informed of her earlier adventure. With this doubt in mind, feeling that she was deceitful and not playing the game squarely, she married, largely to escape the painful situation at home. From the start she was unhappy. She feared that her husband might learn of her youthful error and that she would again have to go through the recriminations, blame, and lack of understanding which she had previously suffered. Convinced of her inferiority and feeling that she was not worthy of so fine a husband, she made an extra effort to be a good wife, but the married relationship soon became distasteful to her on account of the memories it kept constantly fresh. The situation grew to be intolerable and was made more complicated when the husband's father came to live with them. He was a stern old man of very high motives, believing strongly in the efficacy of prayer, and had been known to pray in public for the welfare of his son's wife. The patient admitted that she had no objections to being prayed for, but objected to having it done publicly. While on a vacation she met the second man. His views of life were rather easygoing, and probably he had somewhat the makeup of her father. For the first time she felt she could discuss her problems with someone who could understand them. This was the deciding factor, for, although for her child's sake she might be willing to continue living with her husband, she did not feel that she

could any longer be a wife to him and in fairness to him she decided she must make the break. She had tried her best to carry on, but her ability to adjust herself further was apparently beyond her, and almost anything was better than her present impossible situation. There is little doubt that if she had received proper handling as a child or even if she had received sympathetic understanding and guidance after her first unfortunate affair, much if not all of her unhappiness and her anxieties could have been avoided.

An inadvertent remark dropped on the fertile soil of an unstable nervous system may be the exciting cause of persisting physical complaints. This is illustrated by a married woman, twenty-eight years old. She was examined on account of pregnancy. She also complained of pain in the right lower abdominal quadrant persisting for the past two years. Her father was living and well. Her mother died at childbirth. There was no chronic disease in the family. The patient had the usual children's diseases and at one time was told she had an internal goiter. She was sent to the hospital seven weeks before delivery and was kept quiet in bed most of the time on account of a threatened miscarriage. She was finally delivered of a hydrocephalic, macerated fetus. There were no lacerations and no hemorrhage. The placenta was small and filled with infarcts. The cord and membranes were normal.

For ten months following delivery the patient complained, first, of abdominal pain in the right lower abdomen and, later, of constant frontal headache with exacerbations. Repeated examinations were made including a general physical, pelvic, gastro-intestinal study with *x*-rays and a barium enema. Examination and *x*-rays were made of her chest, sinuses, and teeth, and her blood, urine, and basal metabolic rate were investigated.

This rather complete study revealed only an infection of the right antrum and ethmoid with a cloudy frontal sinus. A radical sinus operation failed to relieve her headaches. The abdominal pain disappeared spontaneously about ten months after delivery, but the headache persisted. It was not until this time that a neuropsychiatric study was made. The neurological examination was negative. The patient was a quiet, retired little woman who gave the impression of extreme reticence. Her attitude was not exactly defensive, but she offered no point of contact. She responded to questions sparingly and volunteered nothing. The following points were finally elicited: The patient had stopped

high school during the first year because of poor vision, of which she still complained. At the age of seventeen she had a nervous breakdown lasting six months. The onset was gradual, and recovery was gradual. She had not been unconscious or disoriented and had not been in the hospital. The chief symptoms were nervousness, irritability, would scream if touched, was jumpy, and would drop or throw whatever was in her hands if spoken to sharply. She had no insight into the possible cause of this condition, but said that recovery was complete. Later she returned to missionary school, where she met her husband. Her early home life had been very unhappy. Her mother died when the patient was about four. The father was very strict and would not allow parties or dances. Shortly after the birth of her first child, at which time a miscarriage also threatened, she went with her husband as a missionary to a foreign field.

In searching for a reasonable point of attack, several things suggested themselves: one, that the patient, although a conscientious religious worker, was searching for a legitimate excuse for not returning to work in the missionary field. Following this line it was determined, on a subsequent visit, that this was the one field of endeavor in which she was able to find expression, and she was sincere in her desire to return to her work. Later a further reason for her wish to return to South America was established, namely, the desire to get away from her father. Another possible cause of her condition might have been in the sexual field. Because of the patient's shyness it was considered unwise to enter into a discussion of this during the earlier visits, but closely related to this, however, was the fact that she had given birth to a still-born hydrocephalic child. Very definite resistance was met in following out this line. She hung her head, became very red, spoke in a low tone, and insisted that there was nothing more to be said about this thing. Questioning brought out the following facts:

She entered the hospital because of a threatened miscarriage. Later she was informed that her child would probably be born dead. This was a shock and disappointment for she wanted more children, but she made a fair adjustment to it, probably along the line of the "Lord's Will be done."

She was under an anesthetic when the child was born, but upon awakening she asked the nurse on duty whether it was a boy or a girl, and the nurse replied that she did not know, that they could not tell the sex of the child, and that the

child had been an "idiotic monstrosity." Later her physician had asked if she knew about the child, and the patient thinking there was nothing to be gained by talking about it, said that she did know.

The patient began to doubt the statements of her physicians because one of them had told her that a specimen of blood was taken for the purpose of determining how much blood she had lost. She knew, however, that the purpose of the test was to determine if she had syphilis. She felt that all physicians would probably lie in order to hide the facts.

From this point on the patient brooded, and worried over what had happened. Among the questions which she asked herself, were "What will the next child be like?" "Did she have syphilis?" "If so, had she inherited it?" "If not, had she acquired it from her husband?" "Suppose she should give birth to a living monstrosity, etc.?" These questions were answered in detail, the patient reassured, and she was dismissed for two weeks.

Two weeks later the headaches had disappeared, and she was sleeping better. She had gained weight, and her general appearance was improved, but there was still a complaint of easy fatigue. The following points were brought out at this and subsequent visits. The patient's early home life had always been unhappy. Her father had always had a most violent temper over which he had no control. When the patient was about three years old she had at one time been so frightened by her father's rage that she had crawled under the bed and refused to come out until someone had killed her father. When the patient was about four years old her mother died, and later her father married again, but soon separated from his second wife. The patient had always felt alone. At no time had there been any companionship between her and her father or stepmother. Because of this she had early developed the habit of living inside of self, solving her own problems, and answering her own questions correctly or incorrectly, or allowing them to go unanswered. While in high school she tried to make a confidant of a schoolmate, but this confidence was betrayed, causing what to her adolescent mind was serious trouble. This experience served more firmly to establish the shut-in attitude. The patient never had the normal association with other children, partly because of her father's denial and partly because of her reluctance to associate with other children.

The patient's fear of her father at first was a

fear for herself and later became a fear that her father would injure someone else. Following her marriage the patient and her husband visited her father, and in an argument between her father and her husband the latter was stabbed. The patient had been present during the entire affair, had witnessed the stabbing, had taken an active part against her father in the scuffle, and later had called the sheriff.

Following this, every time the patient saw a knife she felt the impulse to stab someone. Gradually this fear disappeared. The patient's knowledge of syphilis had been acquired by reading, and there was a fear that she had inherited it from her father, who she knew had lived with numerous women after his separation from his second wife, and who she suspected of living a promiscuous sex life before his first marriage. The patient had had a persistent fear, more firmly established now than ever, that she was losing her mind. Her father's abnormal temper, her nervous break-down at the age of seventeen, her abnormal thoughts following the stabbing of her husband (for example, the impulse to stab someone), and her mental state following the delivery of her last child—all led her to believe she was going crazy.

A clear explanation of her thoughts and motives relieved her fears. She made a complete adjust-

ment and returned to her missionary work with no physical complaints and a mind free of worry.

The cases cited are rather outstanding examples of the need of mental hygiene, but such cases, perhaps not quite so clearly cut, occur almost daily in every physician's practice. The human body is a closely adjusted and finely coordinated machine composed of different sets of organs. The functions of each of these organs are closely related, and their normal action is dependent upon the individual health of each organ and also upon the correlation of their activities. The nervous system, vegetative and cerebrospinal, is partly responsible for this correlation. The ability and method of adjusting to a constantly changing environment will materially affect the functioning of the nervous system and, in turn, other organs; therefore an understanding of the general principles of mental health is not only of great aid in helping those who are frankly neurotic, but it is also of immeasurable value in the treatment of those suffering from organic disorders.

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THE ORGANIZED FIGHT AGAINST TUBERCULOSIS*

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To sell the idea of the prevention of tuberculosis to a hundred million people scattered over an area as large as the United States must require careful organization. This has been the aim and objective of the National Tuberculosis Association in the last twenty years of its activity.

When the National Association opened its first office, in January, 1905, it found very little equipment that could be capitalized in an organized fight against tuberculosis. There were a handful of state and local associations that had been organized in a more or less desultory fashion during the previous decade, but, all told, the number that were capable of doing any kind of organized

work in their own communities could be counted upon the fingers of one hand. There were a few scattered hospitals, most of them for private patients or for bedridden invalids and chronic advanced cases. There were less than a score of active tuberculosis clinics. There were no nurses, no open-air schools, and very little official interest on the part of health departments with the exception of those of New York City and one or two other places.

Into this situation the National Tuberculosis Association projected an organized campaign designed to reach every city and county of the entire United States. The methods used to effect the desired result were gradually evolved over a period of ten years. These methods finally crystallized themselves along the following lines, which represent a fairly well-rounded program

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for the prevention of tuberculosis in a local community:

1. An organization or association, usually designated as a tuberculosis or public-health association with a full-time executive, for every city and county with a population of 30,000 or over, whose program is designed to teach the public and to bring about the co-operation of official and non-official agencies in securing the machinery necessary for the treatment and prevention of tuberculosis.

2. Sanatorium, hospital, and other institutional provision for those who are sick, or who are suspected of having tuberculosis, adequate to meet the community needs on an average of at least one bed for every annual death. These institutions should be operated by public funds wherever possible, the purpose of the tuberculosis association being to agitate and secure the necessary funds for the establishment and proper maintenance of the institution.

3. Clinics, both stationary and traveling, for the diagnosis of tuberculosis and allied diseases; preferably under public auspices.

4. Nurses, either specialized or as part of a generalized program, sufficient to care for all tuberculous patients needing home treatment or supervision.

5. Legislation adequate to provide registration and reporting of tuberculosis, prevention of spitting, and institutional and other provision for care and treatment, along with adequate centralized control in the official department of health, preferably under a division of tuberculosis.

6. Special provision for the prevention of tuberculosis among school children, consisting of an adequate health-education program, the periodic examination of all school children, and the correction of physical defects, together with the special treatment of borderline cases in preventoria, open-air schools, or summer camps.

7. A fund-raising campaign adequate to support national, state, and local work. This need has been met amply through the annual Christmas Seal Sale, which, starting with \$3,000 in 1907, in 1924 raised \$4,500,000.

Broadly speaking, these are the outlines of a community program, which it has been the aim and purpose of the National Association to secure in as many different communities throughout the United States as possible. Early in its activity the National Association started to develop along state lines, and with this end in view its first aim was to secure a well-equipped, adequately financed state association in every state. This task was completed in 1917. To the state asso-

ciations has been entrusted the responsibility for local organization. The National Association, therefore, works through the state association to the local.

Since the perfection of the state organization plan, the primary purpose of the National Association has been to develop higher standards of work in every specialized field of tuberculosis control,—institutional, educational, fund-raising, etc. Thus the staff of the National Association consists of experts who act as advisers to the states and to the locals and to official agencies.

While the goal above outlined has not been reached, remarkable progress has been made. In addition to the state organizations, local organizations and temporary committees have now been formed in approximately 1,500 communities. The aim of the National Association at present is to provide a full-time executive for all communities of 30,000 or over, or for those communities that can afford to keep such an executive. This aim is being achieved gradually in state after state. The Christmas Seal Sale is providing the increasing revenue for this purpose.

The trend of organization and development of the tuberculosis program in the United States is also of particular interest. When the National Association started to organize in 1905, the prevailing conception of tuberculosis control was embodied in two general ideas: first, that tuberculosis was curable, and, second, that it was preventable chiefly by means of preventing infection. In fact, the movement for local and county hospitals in the United States growing out of the impetus of the International Congress in 1908 was very largely based upon the concept of the prevention of infection. It was not until seven or eight years later that the more modern conception of infection based upon the discoveries of von Behring, Pirquet, Loomis, and others became prevalent.

Gradually the swing of the tuberculosis campaign has been away from the prevention of infection and rather towards what one might call for want of a better designation "the building of resistance." As the scientific and public appreciation of the almost universal extent of infection grew and along with it the significance of childhood infection, the tuberculosis campaign gradually broadened until it is becoming more and more a general public-health movement.

The scientific basis for this may be found in the fact that so long as tuberculosis is largely a childhood infection and so long as infection is activated into disease by the breaking down of

normal resistance, anything that tends to maintain the general good health of the child and the young adult especially will tend to prevent tuberculosis.

Likewise treatment has undergone certain radical changes. Instead of the hopeless outlook, particularly for the advanced case, that was evident ten to fifteen years ago, to-day with modern methods of treatment and such specific aids as surgery, heliotherapy, etc., even the advanced case is recognized as having a chance. Hope has come to be the prevailing attitude in treatment, for the advanced as well as for the early case.

The future of the tuberculosis campaign probably lies along the lines of increasing expansion to a general public-health movement. The impetus and pressure of this expansion are already being felt both from above, that is, from the national organizations allied with the National Health Council, and from below, that is, through the local and state organizations. If the funds can be raised, it seems reasonable to expect that a highly organized national-health movement will eventually emerge out of the present national tuberculosis campaign.

CHOLECYSTOGRAPHY BY THE ORAL METHOD*

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MINNEAPOLIS, MINNESOTA

The clinical diagnosis of disease of the gall-bladder is highly inadequate: it is uncertain and frequently fails except in a small group of cases which exhibit typical attacks. The x -ray examination of the gall-bladder, in the past, has been of little aid. The direct evidence of pathology, that is, the visualization of calculi, could only be obtained in 50 per cent of the cases in which stones were actually present; it helped not at all in the diagnosis of inflammatory conditions. The visualization of a gall-bladder shadow is a very doubtful indication of pathology and probably depends upon good technic rather than on the state of the organ itself. The indirect evidence, as shown by the barium-meal examination of the stomach and duodenum, is often very misleading. In fact, these older x -ray methods were not much more successful in diagnosis than the clinical procedures.

The method described by Graham and Cole¹ is, therefore, a distinct advance. It depends upon the fact that the salts of the tetrahalogen compounds of phenolphthalein are excreted by the liver. By using bromine as the halogen, they were able to introduce a substance into the biliary tract and thus into the gall-bladder, which cast a distinct shadow upon an x -ray film, similar to that of barium sulphate in the stomach. Their method consisted of the intravenous injection of sodium tetrabrom-phenolphthalein, followed by x -ray examination of the gall-bladder region at intervals. In the normal case a distinct shadow

would be seen which appeared at four hours and disappeared within thirty-two hours. In the abnormal case, due to changes in the gall-bladder itself, or in the cystic duct, either no shadow could be found or the appearance and disappearance of the shadow was abnormal in its time.

Certain objections to this method arose at once. The injection frequently was toxic, producing nausea, vomiting, diarrhea, and often syncope. Furthermore, there were serious local manifestations at the site of injection, such as phlebitis and necrosis of the tissues. Whitaker and Milliken² modified the method by using sodium tetraiodophenolphthalein, which, by its greater opacity to the Roentgen ray, permitted the use of smaller doses. Later they suggested the use of this substance orally.³

We conducted a large number of experiments in this direction at the General Hospital. The objections to the oral method were two: the dye caused nausea and vomiting; it became insoluble when in contact with the acid gastric secretion and was not absorbed, the result being that no shadow was obtained even in normal cases. By alkalizing the stomach prior to giving the dye, some good results were obtained, but they were not consistent. Passing the substance directly into the intestine through a duodenal tube was very effective, but the difficulty of passing the tube in some cases made it an impractical method. Salol-coated capsules and pills were also used with some success.

The present method for the oral test is similar to that described by Whitaker and Milliken.³

*Presented with lantern-slide demonstration before the Hennepin County Medical Society, October 28, 1925.

Sodium tetraiodophenolphthalein, in pills or capsules, protected either by stearic acid or keratin, is used. The patient is given 5 grains for each 7.5 pounds of body weight. Beginning at 8:00 P. M., just after a light meal, the pills are taken in divided doses every fifteen minutes with water. No more food is permitted until the following noon. The first films of the gall-bladder region are made at 9:00 A. M. the next day (twelve hours). Another examination is made at noon (fifteen hours). Following this the patient eats a fatty meal containing at least one-half glass of cream and the yolks of three eggs. It has been demonstrated that this will stimulate emptying of the normal gall-bladder. Two hours later another set of films is made (seventeen hours) and the final set is taken at 5:00 P. M. (twenty hours).

In normal cases the dye should be absorbed by the portal system into the liver, excreted with the bile into the gall-bladder, and concentrated here so that at twelve hours a fairly distinct shadow of the gall-bladder can be made out in the roentgenograms. At fifteen hours the shadow should be more distinct and more dense and may show some change in size, shape, and position. Following the fatty meal there should be a marked reduction in the size and intensity of the gall-bladder; while in the twenty-hour film it should be very small or have completely disappeared. The size, shape, and position of the normal gall-bladder are so variable that they have little significance in diagnosis, except that they should show changes, from time to time, in the normal case.

The pathological gall-bladder may give no shadow whatever. This may be due either to obstruction of the cystic duct, permitting no dye to enter, or to the inability of the organ to concentrate its contents. In the latter case a faint shadow may appear, which will not show changes in form or position from time to time, and will not disappear after the fatty meal. Stones may manifest themselves as negative shadows of decreased density in the midst of this faint gall-bladder shadow. Occasionally, calculi, which cannot be visualized by the usual methods, will become visible after administration of the dye. The gall-bladder having emptied itself, these stones retain a coating of the opaque material and manifest themselves as ring-like shadows, best seen in the twenty-hour film.

Certain difficulties present themselves: The patients are sometimes nauseated and in some cases may vomit the dye, thus nullifying the test. Faulty preparation of the pills may result either

in rendering the material insoluble by contact with the acid gastric contents, or in failure of the coating to dissolve at all. Either of these accidents will prevent the appearance of a shadow even in the normal case. In the former event, the opaque material usually can be seen in the colon; in the latter, the undissolved pills, giving the appearance almost of bullets, will appear in the films and give the clue as to the actual cause of the failure to demonstrate a shadow. The method is dependent on a fairly intact liver function, so that in cases of severe liver disease evidence of a pathological gall-bladder might be obtained, even if the gall-bladder were normal. Usually these cases can be ruled out clinically with ease. Jaundice is the only contra-indication to the test; the result is unsatisfactory and some toxicity usually is manifested. The *x*-ray technic is obviously of importance, particularly with regard to the position of the patient and the film. We have found the gall-bladder far removed from its usual location in a number of cases.

At the General Hospital and in a few cases seen privately, the test has appeared to have excellent possibilities. So far, in all the cases explored surgically the diagnosis made by this method has been correct. Notable amongst these are two patients, each of whom appeared to present a fairly typical picture of cholecystitis. Both surgeons and clinicians were so confident of this that the patients were explored in spite of a negative Roentgen opinion. Both were found to have normal gall-bladders at operation. In one case where the greatest difficulty had been experienced in arriving at a diagnosis, and repeated *x*-ray examinations had been negative, we were able to demonstrate calculi by the use of the dye.

In summarizing, it may be said that the method is not yet a finished one: we have much to learn about its application. Furthermore, it is not a simple matter to decide whether the test is negative or positive; it requires fully as much study and experience and judgment as the barium-meal examination of the gastro-intestinal tract. Nevertheless the method offers us a valuable aid in the diagnosis of gall-bladder disease, which, in the course of time, will no doubt be as accurate as the Roentgen examination of the gastro-intestinal tract.

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THE JOURNAL-LANCET

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HUMANIZING THE MEDICAL PROFESSION

This field has been open for discussion for ages, and it is with a tremor that the writer attempts to analyze the situation. The subject really should not be strictly limited to the medical profession, but as we are important members of society (at least we make ourselves believe that we are) it may be the point for discussion.

First and above all is the urgent necessity of the medical men getting into closer harmony and having a better understanding among themselves. The writer confesses that he has often experienced a critical feeling toward his fellow-men and doubtless has criticized them unjustly, and probably without any purpose in mind, but simply to vent his own spite and envy. On the other hand, he may himself have been criticized in the same manner, by the same students of medicine of which he is but one, and doubtless has suffered in consequence for the fault.

It seems almost incredible, impossible, to think that the medical associations are or can always be harmonious. But a healthy criticism, done openly and above-board, in medical society meetings is for the good of the individual member. The example has been up before us that these various group clinics have done much to harmonize the internal feeling and the close apprenticeship between several individuals. That is a matter of

adjustment, of course, to one's environment and to one's associations; and, if working together produces a harmony in the finished product, certainly open criticism, provided it is understood to be without any personal feeling in the matter, is just as helpful as working together.

There is plenty of room in our medical societies for this same feeling if we could only bring ourselves to accept it—to come together and not get up and laud one another's papers as if they were something more important than had ever been presented before, but discuss these papers critically. How many times in our experience have we been acclaimed, applauded, and congratulated for the presentation of a lot of old stuff that we simply put in a little different form from that in which it is generally known. Then some kindly intentioned friend thinks it his duty to make favorable comment upon the paper and to accept it as a final solution of the entire question and admit that he has nothing further to add. Then he sits down. That is the time when the aggressive member of a medical society should become intentionally critical, if he knows anything about the subject at all; and it should be his purpose to discuss and criticize the views of the writer of the paper. Can you imagine a medical society indulging in such *friendly* criticism? Can you visualize a medical society in session where a lot of droopy-eyed men are trying to keep awake, or are smoking their cigars and thereby polluting the air, wishing the program were over—can you imagine their surprise at some man bold enough to get up and assert himself, criticize his fellow-man, and jump all over him as it were? Yet the thing can be done if it is done in the right spirit. Will that ever come, or shall it be left to clinical groups organized for a definite purpose—to examine their patients from various special points of view and finally hand down an ultimate opinion based on all the findings? Why not do it more generally? Why not take your patient into your confidence and tell him that such and such things must be done, and, above all, show him that you are anxious to get at the foundation of his trouble, to keep in mind constantly that you are interested in his case and that you are willing to go to almost any length to help him in analyzing his chain of symptoms, and perhaps cure him of his disorder.

Patients are very curious people sometimes, and they recognize in one man a different manner, a difference in technic in making examinations, and they are very much impressed by this. They finally conclude that this man has studied the art of medicine, that he is competent, capable,

and trustworthy. But let him show one indication of indifference toward them or their symptoms, and they rebel in a moment—these very sensitive creatures. Consequently, in line with the harmonizing of the medical profession we should endeavor to harmonize our relations with our patients, to make the way easier for them, to take them into our confidence and tell them of their disorders and diseases, their faults or their failures, whatever they may be, but do so in a kindly way, so that they may help the physician, as well as themselves, and get better.

As has been said before, the average medical student is fairly well equipped with the tools of his trade when he goes out of the university medical school. He knows how to make an examination, he knows how to analyze secretions, he knows (technically) how to do things, but very few of them have anything like the necessary manner which goes to make up the successful practitioner. Dr. Charles P. Emerson, of Indianapolis, in speaking of pathological examinations, develops a good many important themes, and this is taken from the December number of the *American Medical Association Bulletin*. He suggests in his paper that physical diagnosis is a personal matter, and he looks upon it from the medical students' point of view. He also looks at the weaknesses of the medical curriculum through which they have passed, and he concludes that there are too many and too poorly trained medical graduates. Perhaps the trouble is that he is expecting too much. It is certainly known that many of the medical schools give the students far better courses in physical examination than others do. He thinks that the opportunities for the present-day medical students are far greater than those enjoyed by the medical students of two or three generations ago. He suggests that such men as Austin Flint, Edward Janeway, William Osler, and others might have envied the modern medical student his opportunities. He believes, further, that these students who might make such men are not coming into the schools—that they have disappeared, just as the general practitioner is nearly as extinct as the beloved family doctor.

Dr. Emerson believes, too, that it is the philosophy underlying our present medical curriculum that is wrong. The doctor must have something in him that appeals to the patient, wins his confidence, and fixes his purpose, and that is more important than many of the fundamental sciences in which the modern medical student is overtrained. That he may learn the art of medicine in later years is possible, but very few men do.

INDISCRIMINATE DRUG-TAKING

A West End London coroner held, in one day, inquests over two physicians living in Kensington, both of whom had died from the effect of drugs. This is probably a more frequent condition than is usually credited, that is, the large number of medical men who habitually use drugs (and when we say large number we mean relatively speaking). This does not mean that the drugs are all of one kind, narcotic or otherwise. Many doctors are great drug users, and probably some of them experiment on themselves in order to be able to tell their patients what effect the drug has. Unfortunately, we physicians are very liberal in our prescribing of drugs, and it is only by the grace of God or the hand of man that many of us know enough to keep the drug habit down as much as possible.

This does not apply to physicians only, but to their patients. If we could only open up our storehouse of knowledge and tell what our patients take in the way of drugs, it would startle the president of the state society, whoever he may be. I think any of us can call to mind a number of patients who are afflicted with a drug habit or desire which finally becomes a disease. And doubtless some of us could tell of patients who were taking anywhere from six to twelve different kinds of drugs a day, just because they love to take something, and furthermore because the doctor has no power to restrict their drug-taking. But if he has any wisdom he will limit them to simple things, and if he has any sense at all he won't tell them it is a state of mind that they are in, which it is, because if he did that he would lose his patients! It is a common condition of mind, easily broken under favorable circumstances, that people get into and they form the habit of taking things for this, that, and the other ailment. Consequently, it is very easy for these people to get into the habit of taking sleeping medicine or sedatives, just as these two physicians in Kensington did. One of these men was 49 years of age and was employed in the Public Health Department of the London County Council. He took morphine, cocaine, and barbitol in order to relieve pain. Whether he died from barbitol poisoning is very doubtful, but probably the combination of drugs was enough to upset him and quite possibly he had some disease which had not been discovered, and the two combined causes ended his life. The other physician was 34 and in fairly good health, but he suffered from insomnia. He took to drink, and he drank more than was good for him. After his death the post-mortem disclosed six ounces of red fluid in

the stomach, some narcotic preparation, probably a mixture containing chloral hydrate and Indian hemp.

It is rather singular that two such men, knowing what they did about medicine or what we presume they knew about it, should take such a mixture of drugs to relieve themselves of pain and insomnia. It is perhaps just as well to advise our patients that they are taking too much stuff that does not belong to them. Not infrequently we are called to see people who have taken anywhere from thirty to fifty grains of barbitol or veronal. So far, in the writer's experience, no death has occurred under such circumstances. One woman who took thirty-five grains of barbitol slept for approximately thirty hours and woke up bright as a tack! Another woman who took fifty grains, with suicidal intent, was prevented from dying by the use of the stomach pump within an hour. Other cases, however, are commonly reported in which the barbitol has been taken in fifteen to twenty-five grain doses with but little effect, and without relief for insomnia. The same is true of the real narcotic drugs, opium and its derivatives. People get into the habit of taking them and take them until their systems are thoroughly saturated. Incidentally they are thoroughly immunized, and finally they develop only a state of mind, which continues. All of these people can be easily relieved of their drug-taking propensities under proper environment unless they are too feeble-minded to offer any resistance to the habit at all. The writer has one case in mind, that of a woman seventy-eight years of age, who had taken forty grains of morphine daily for forty years; yet she was cured within a few weeks, and she wondered how it happened. Another woman who had been taking opium, eating the opium as they did two generations ago, ran up against the Harrison Narcotic Law and found it was going to be difficult to continue to get the drug. She, being a firm and wisely-minded woman, decided she would have to stop sometime and might as well stop right away, and she did. Now, both of these cases made a prompt recovery without a return of the habit, but they did not know why they got well. They recovered because they wanted to recover and because they were so immune to the effect of the narcotics they had been using that their systems did not need any further medication.

Undoubtedly the use of patent medicines, fortunately much fewer than they were a number of years ago, and the use of pharmaceutical preparations will go on as long as the race lasts in

spite of the drugless healers. Doubtless some of these people derive a good deal of comfort from taking drugs, just as the man who smokes his after-dinner pipe or cigar enjoys himself. It is all one and the same thing, a state of mind. If they want to be happy, they want others to be happy, too. But they ought not concentrate for happiness on the taking of needless drugs. So long, however, as the drug stores sell barbitol, veronal, and other sleeping powders or sleep-producing drugs, what has the medical profession to say about it? Practically nothing. Fortunately, the sale of narcotics has been kept down, and probably will continue to be so.

CORRESPONDENCE

BERLIN WELCOMES AMERICAN PHYSICIANS

TO THE EDITOR:

We wish to call your attention to an article appearing in the *Journal of the American Medical Association*, January 16, Department of Foreign News, under the title, "Berlin Faculty decides against official welcome to American physicians," copied from a German medical journal dated December 11, 1925.

The reason given by the Faculty of the Berlin University for this action was on account of the exclusion of German physicians from taking part in international medical congresses.

There is no doubt that this was the attitude taken by the Faculty of Berlin last fall, but many things have transpired to strengthen our international relations since that time. The condition at the present time is entirely different.

The first of this month we received assurance from both the German Government and the Faculty of Berlin that the members of the Inter-State Post Graduate Assembly, who will visit Berlin, June 15, 16 and 17, will receive a most hearty welcome. These greetings were received following several months of discussion between the representatives of the German Government, the Faculty of the University and representatives of this Association, especially with Dr. Carl Beck, Secretary of the Foreign Assemblies of this organization, who is now in Europe completing the final clinic arrangements for the 1926 assemblies.

The position taken by this organization was: First, that the same spirit of equality and justice enjoyed by the profession of other countries in their relations with one another should be extended to those of the German speaking countries.

Second, that this Association is not affiliated with or responsible for the acts of other medical organizations, therefore, we cannot sign any documents or declarations pertaining to other medical bodies.

Following the publication of the article above mentioned, we cabled Professor Bier, the chairman of the Berlin clinic committee of this Association, to give us a statement so that we could speak authoritatively. The following is a copy of Professor Bier's answer:

"William Peck, Berlin, January 21, 1926.
Freeport, Illinois.
Under the stated circumstances heartiest welcome.
Letter follows:

Bier."

In bringing about this understanding we believe we have advanced largely the spirit of International Good Fellowship in which this organization is deeply interested.

Very sincerely yours,
William B. Peck,
Managing Director,
Inter-State Post Graduate Assembly.

BOOK NOTICES

THORACIC SURGERY: The Surgical Treatment of Thoracic Disease. By Howard Lilienthal, M.D., Professor of Clinical Surgery at Cornell University Medical School. Two octavo volumes totaling 1,294 pages, with 90 illustrations, 10 in colors. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, \$20.00.

In this two-volume work on thoracic surgery the author has very successfully collected many data that one had to search for heretofore extensively throughout the literature on thoracic surgery. This book undoubtedly will vie for honors with Sauerbruch's work on this subject.

Many important clinical and experimental considerations on thoracic surgery have been given sufficient emphasis. One is happy to notice that Minnesota is having an active interest in thoracic diseases when one sees that proper credit is given for the work of such men as W. J. Mayo, C. H. Mayo, A. Schwyzer, W. Lerche, George H. Dunn, Moses Barron, A. T. Bell, F. C. Mann, and F. W. Wittich.

For those interested in thoracic surgery these two volumes will serve very efficiently for ready reference.

—MINAS JOANNIDES, M.D.

EMPHYEMA THORACIS; Some Fundamental Considerations in the Treatment of. By Evarts A. Graham, M.D., Professor of Surgery in Washington University School of Medicine. Published by C. V. Mosby Co., St. Louis. Price \$2.50.

This volume of 110 pages is a résumé of the important discoveries made by E. A. Graham which revolutionized our conceptions and treatment of empyema of the thorax. The significance of his work is demonstrated by the difference in the mortality from empyema which dropped from 20-70 per cent of cases to as low a figure as, 4.3 per cent after the application of the principles described in this essay. This essay was awarded the Samuel D. Gross prize of the Philadelphia Academy of Surgery in 1920. The book is divided into four sections, a summary chapter, and an appendix. In the first section under the major heading of pathology the important principles involved in the bacteriology, pathology, and pathological physiology are discussed. Thus the importance of bacteriology on the course and the clinical picture of the disease is described. Open pneumothorax and its relation to

asphyxia in the presence of empyema is discussed in detail.

There is a detailed description of Graham's experimental work on pneumo-thorax and his conception of pressure changes in the opposite chest. There are other topics that are discussed quite extensively. A partial list of these is the following: The relation of the size of the chest opening to the size of trachea and vital capacity of the lungs. The effects of immobilization of the mediastinum. Such subjects as closed pneumothorax, experimental empyema, experimental pneumonia, and the application of experimental results in clinical cases of empyema are given sufficient attention. Problems of drainage in empyema and deferred operation are also discussed in this section.

In the second section under the major heading of the prevention of chronic empyema great emphasis is laid upon two points: first, sterilization of the empyema cavity and, second, the obliteration of the cavity. Ways and means of attaining these results are discussed in this section. The third section is devoted to the attention of nutrition of the patient. Various metabolic topics are considered which are concerned in building up the resistance of the patient.

In the subsequent pages Graham discusses such questions as "When is an empyema healed?" Physicians who cannot afford the time to read the whole book, will spend five minutes very profitably if they read the short chapter on summary and conclusions. On the whole this brief book is a treasure chest of invaluable information on empyema. It deserves a place on the shelves of every physician's library.

—MINAS JOANNIDES, M.D.

NEWS ITEMS

Dr. G. F. Walter has moved from Minneapolis to Dawson.

Dr. M. Joannides, of Minneapolis, has located in Chicago.

Dr. A. J. Button has moved from Hackensack to Greenbush.

Dr. F. F. Lang, of Danville, Ill., has located in Montpelier, N. D.

Dr. Harry B. Fralic, of the U. S. Veterans' Hospital, St. Paul, will move to Lake City, Florida.

The death-rate in Minneapolis from tuberculosis was cut from 81 per 100,000 in 1924 to 68 per 100,000 in 1925.

Dr. J. W. Freeman, of Lead, S. D., president of the South Dakota State Board of Health, has been ill for some time.

Dr. Alex R. Colvin, of St. Paul, and wife will spend February and March in Europe, making the usual Mediterranean trip.

Dr. M. C. Fischer, of Minneapolis, has become associated with Dr. F. W. Spicer, of the Physicians and Surgeons Clinic of Duluth.

Dr. John A. Lepak, of St. Paul, read a paper on "Protein Therapy" before the St. Louis County Medical Society at Duluth last month.

Dr. H. O. Ruud, of Minneapolis, has become associated with the Hot Springs (S. D.) Clinic in the eye, ear, nose, and throat department.

Drs. Kilbride and Holmberg, of Canby, have established a clinic in that city, and have equipped their offices with much modern apparatus.

Dr. William Sauer, who has been practicing at Waterloo, Iowa, since he came to this country from Germany, in 1923, has located at Wahpeton, N. D.

Dr. E. J. Wenaas, of Mayville, N. D., and formerly of the Canal Zone, has taken over the practice of Dr. S. P. McDaniel, at Mountain Iron, Minn.

The Minneapolis General Hospital serves three meals a day to nearly 1,000 people, including patients and help. Thirty-two physicians live in the hospital.

Dr. A. J. McCannel, of Minot, N. D., is spending a part of the winter on the Pacific Coast, but will be back in ample time for the next meeting of the State Medical Association.

The American Board of Otolaryngology will hold examinations in Dallas, Texas, on April 19, and in San Francisco on April 27. Membership in the Board is determined by examination.

Due to the fact that the American Surgical Association meets the week of May 24, it was decided to change the dates of meeting of the Minnesota State Medical Association to May 17-18-19.

Dr. J. C. Hagin, has moved from Crooks, S. D., to Miller, S. D., where he is associated with Dr. D. A. Gregory, of Sioux Falls, in the ownership and management of the Miller Hospital and Clinic.

Dr. Clara Edna Hayes, Director of Child Hygiene, South Dakota State Board of Health, was called to Washington last month for the Bureau Directors Conference, Division of Maternity and Infancy.

Dr. Herbert Boyesen, of Truman, has purchased the hospital conducted by Dr. S. F. Hermann at Welcome, and will take charge of the same on April 1. Dr. Hermann will move to Rochester.

Dr. Jacob W. Magelssen, of Rushford, who is now 83 years old, is still practicing and last month observed his 60th year in practice. He graduated from Rush in 1866, and soon came to Rushford.

The new wing just added to St. Joseph's Hospital of Dickinson, N. D., will soon be ready for occupancy. It gives thirteen additional rooms and a chapel. The Hospital admitted 1,040 patients in 1925.

By the "penny-a-day" plan of saving and giving the Ladies Aid Society of Brookings, S. D., raised \$1,000 in 1924, and \$1,100 in 1925, for their hospital building fund. The same plan will be followed this year.

A \$30,000 addition is to be made to the Oakland Park Sanatorium, which is the State tuberculosis hospital of Pennington, Marshall, Roseau, and Red Lake Counties of Minnesota. Dr. B. C. Bernard, Thief River Falls, is superintendent of the Sanatorium.

The Fourth District Medical Society of South Dakota met at Pierre, S. D., last month. After a banquet at the St. Charles Hotel, Dr. H. L. Crane, Chief Surgeon of the Cerro de Pasco Copper Corporation read a paper on the effects of altitude on the heart.

The Clay-Becker County Medical Society held its annual meeting last week at Moorhead. Officers for 1926 were elected as follows: President, Dr. E. W. Humphrey, Moorhead; vice-president, Dr. A. Cyr, Barnesville; secretary-treasurer, Dr. J. H. Heimark, Moorhead.

The Daily Star, of Minneapolis, a labor paper of large circulation and ably edited, is establishing a "Hall of Fame." One of the first nominees in the contest was Dr. George G. Eitel, of the Eitel Hospital. His name was proposed by Dr. Walter E. List, Supt. of the General Hospital of Minneapolis.

Dr. T. P. Groschupf, who graduated from the Medical School of the University of Minnesota, class of '24, and who has been doing special work in connection with the Medical School, has become associated with Drs. Marcum and Stewart, of Bemidji. He will have charge of the pediatric work of the firm.

At the annual meeting of the Lutheran Hospital Association at Watertown, S. D., last month, the Board of Directors were authorized to make a survey of the hospital needs of the Association and to prepare plans to enlarge the Watertown Hospital and also to call a special meeting of the Association to consider such plans.

Martin County, Minnesota, has immunized all of its school children (2,328) and nearly 400 children of pre-school ages against diphtheria, according to Dr. R. C. Hunt, of Fairmont, the County Health Officer. The physicians of the County did the work without charge, and the County paid for the vaccine, which cost \$1.10 for each child.

Dr. Robert M. Evans, of Minto, N. D., died last month at the age of 86. Dr. Evans came to North Dakota with a group of Canadian pioneers in 1879, who settled in the Turtle Settlement. Dr. Evans soon moved to Minto, a new town in that section, where he practiced for forty-five years. He was a leader in the educational and medical affairs of North Dakota and was highly honored as a citizen.

Dr. Charles A. McCollom, formerly Dean of Hamline Medical College, Minneapolis, died last month in Pasadena, Calif., at the age of 79. Dr. McCollom graduated from Rush in the class of '68 and practiced for many years in Minneapolis until he retired and settled in Carmel, Calif. He was Dean of Hamline for twenty years and was head physician of N. W. National Life Insurance Company for a number of years.

The Fergus County Medical Society of Montana held its annual meeting at Lewistown last month, when the following officers were elected: President, Dr. E. M. Gans, Edith Gap; vice-president, Dr. C. C. Wallin, Lewistown; secretary, Dr. E. A. Welden, Lewistown; delegates,—Drs. A. C. Biddle and J. G. Parsons, Lewistown; alternate delegates,—Drs. E. F. Ross, Harlowton, and Dr. E. A. Welden, Lewistown.

At the annual meeting of the Tri-County Medical Society of North Dakota, held in December, a number of clinical cases were presented and discussed. The election of officers followed and resulted as follows: President, Dr. C. R. Thompson, Oberon; vice-president, Dr. H. A. Owen, Grace City; secretary-treasurer, Dr. H. Van de Erve, Carrington; censor, Dr. E. L. Goss, Carrington; delegate, Dr. R. J. Critchfield, Fessenden.

Information concerning the 1926 foreign clinic tour of the Inter-State Post Graduate Assembly of North America is now available and may be obtained from Dr. William B. Peck, Freeport, Ill., the Managing Director of the Assembly. The chief clinics visited this year will be in cities of Italy, Switzerland, Germany, Austria, Czechoslovakia, Holland, and Belgium. The members of the touring party will be divided into two sec-

tions. The first section will start in April and the second in June.

The Glen Lake Sanatorium (the tuberculosis sanatorium of Hennepin County) celebrated its tenth anniversary last month at the home of the institution, a short distance from Minneapolis. It opened in 1916 with 50 patients and now has 630 patients and a waiting list. It has been under the superintendency of Dr. E. S. Mariette from the start, and the Sanatorium Commission remains the same except for one change, Dr. S. Marx White having succeeded Dr. J. W. Bell, who resigned on account of pressure of work. Dr. E. L. Tuohy, of Duluth, made the principal address at this meeting.

At the annual meeting of the Cass County Medical Society of North Dakota, held in December, the Secretary presented his annual financial report, and the President spoke of the progress of the Society during the past year. Dr. Lewis of the Public Health Committee reported that all parents had been notified of the results of the Schick test made in the schools. A committee was appointed to consider and report on the subject of buying a lantern for the Society. Dr. Elizabeth Rindlaub reported that the service flag bearing the names of members who had served in the World War had not been completed and presented to the State Association. A committee was appointed to attend to the matter. Dr. Carpenter presented a short paper on early medical practice in Fargo, and Professor Carpenter, of the Agricultural College, spoke on "Modern Aspects of Immunology." Officers for 1926 were elected as follows: President, Dr. Rolfe Tainter, Fargo; vice-president, Dr. H. B. Huntley, Leonard; secretary-treasurer, Dr. L. J. Evans, Fargo; delegates,—Dr. Kent Darrow, Fargo (1 year); Dr. J. F. Hanna, Fargo (2 years); board of censors,—Dr. A. C. Morris (1 year); Dr. M. MacGregor (2 years); Dr. J. J. Heimark (3 years).

MINNESOTA ACADEMY OF MEDICINE

The Minnesota Academy of Medicine held its regular monthly meeting at the Hotel Kahler, Rochester, Minnesota, on Thursday evening, November 12, 1925.

The meeting was called to order by President Dr. H. L. Ulrich. There were 45 members and 22 visitors present.

The minutes of the October meeting were read and approved.

President Ulrich introduced the speakers and called upon Dr. Fulton, the first president of the Academy, who opened the program.

The scientific program consisted of the following reports:

1. Dr. H. S. Plummer, "The Use of Iodine in the Treatment of Exophthalmic Goiter."
2. Dr. W. E. Sistrunk, "Operation for Thyroglossal Duct Cyst." Discussion by Dr. Arnold Schwyzer, St. Paul.
3. Dr. Chas. Sheard and Dr. J. L. Bollman, "Studies in Liver Function," (With lantern slide demonstration.) Discussion by Dr. Hilding Berglund, Minneapolis, and Dr. L. G. Rowntree, Rochester.
4. Dr. E. C. Rosenow, "Studies in Poliomyelitis."
5. Dr. E. C. Kendall, "Progress in Study of Thyroxin." (With lantern slide demonstration.)
6. Dr. W. L. Benedict, "The Ophthalmoscopy of Clifford Allbutt."

On motion the meeting adjourned.

JOHN E. HYNES, M. D.
Secretary.

ANNUAL MEETING OF SIXTH DISTRICT MEDICAL SOCIETY OF NORTH DAKOTA

The meeting was held at St. Alexius Hospital, Bismarck, N. D., on December 15, 1925, and called to order by the President at 8 P. M. The minutes of the last meeting read and approved.

PROGRAM

A clinical discussion of differential diagnosis of lobar pneumonia, pyothorax subphrenic abscess, and mediastinal tumor with presentations of x-ray pictures. W. H. Bodenstab, M.D.

Clinical discussion of urinary obstruction, classifying etiology with obstruction and changes in the prostate, giving diagnosis and x-ray, also demonstrating various instruments and cases.

V. J. LaRose, M.D.

Report of Committee on the publication of a Medical Calendar. The committee went into great detail as to cost and advisability of doing this, and reported unfavorably. The report was accepted by a unanimous vote.

Motion made by Dr. Bodenstab that the amendment to Sec. 7 of Chap. 1 of the By-laws be included in the letter asking for dues for 1926.

Seconded by Dr. Spielman, and carried.

ELECTION OF OFFICERS FOR 1926

Nominations for President:

Dr. G. H. Spielman, Mandan, N. D., by Dr. F. R. Smyth.

Motion was made to close nominations and instruct the secretary to cast a unanimous ballot for Dr. Spielman, made by Dr. Stackhouse, seconded and carried.

Nominations for Vice-president:

Dr. F. F. Griebenow, by Dr. Bodenstab.

Motion was made to close nominations and instruct the secretary to cast a unanimous ballot for Dr. Griebenow, made by Dr. H. O. Brandes and seconded by Dr. Spielman, carried.

Nominations for Secretary-treasurer:

Dr. W. L. Diven, by Dr. Stackhouse.

Dr. R. W. Henderson, by Dr. Ramstad. Nominations closed on motion by Dr. Brandes. Vote by ballot; Dr. Henderson elected by one vote.

Nominations for Delegates:

Dr. H. O. Brandes.

Dr. C. E. Stackhouse. Nominations closed and secretary instructed to cast unanimous ballot.

Board of Censors:

Dr. C. C. Smith, of Mandan, nominated in place of Dr. A. M. Fisher, who has moved to California.

Dr. W. L. Diven nominated as third member, nominations closed and secretary instructed to cast unanimous ballot.

Motion by Dr. Ranstad that a committee of three be appointed to go over the By-laws and revise them and report at the next meeting. Seconded by Dr. Bodenstab; carried.

The committee was appointed by the chair as follows: Dr. R. W. Henderson, Dr. C. C. Smith, Dr. W. H. Bodenstab.

R. W. HENDERSON, M. D.
Secretary-Treasurer.

PARK REGION DISTRICT MEDICAL SOCIETY

The Park Region District Medical Society met January 13, at Fergus Falls. A very interesting program and entertainment was presented to the attending physicians and their wives.

PROGRAM

1. Headaches.....Dr. T. S. Paulson
 2. Malarial Treatment of Paresis Dr. W. L. Patterson
 3. Case Reports.....Dr. W. L. Burnap
- Dr. Hilding Berglund and others discussed these papers.

During the day the physicians' wives organized the Park Region District Women's Auxillary.

After the banquet Dr. Hilding Berglund discussed some recent advances in diagnosis of the gall-bladder.

Dr. E. A. Meyerding, Secretary of the Minnesota State Medical Association, discussed State medical economic problems, and Dr. H. M. Johnson, president of the State Association discussed plans for the future.

A resolution was passed instructing the delegates to the next state meeting, May 17-18-19 in St. Paul to vote for an increase of dues to \$15.00 per annum.

Technician Desires Position

In Twin Cities. Experienced, and can give best of references. Address 111, care of this office.

Laboratory and X-Ray Technician Wanted

A woman preferred. Position with a Clinic in a small city in Minnesota. Address 107, care of this office.

Alpine Sun Lamp for Sale

Just like a new lamp. Used only a few hours as a demonstrator. Direct current. Will sell cheap. Address 110, care of this office.

Wanted

Assistantship or location by well-qualified eye, ear, nose and throat man, good refractionist and operator. Married. Shriner. Excellent references. Address 101, care of this office.

Assistant Wanted by a Surgeon

A graduate or experienced nurse who can give anesthetics, do some x-ray and diathermic work, and make herself useful in the hospital. Location less than 100 miles from the Twin Cities. Will pay a good salary with maintenance in the hospital. A desirable and permanent position for a willing and competent worker. Address 107, care of this office.

Office Position Wanted in Minneapolis

By a young woman who has had three years in college, two years nursing, can do routine laboratory work, typing, etc. Have had office experience. Will accept very moderate wages. Address 338, care of this office.

Position Wanted as Secretary

I desire a position as secretary and stenographer in a hospital, clinic, or doctor's office. Have had five years experience in medical and surgical dictation; aged 26. Can give best of references. Address 106, care of this office.

Position Wanted

By a young woman, graduate of University of Minnesota; spent one year as Chief Clerk in the School of Economics at School Farm; good typist; will work for moderate salary. Address 105, care of this office.

For Sale

A Wappler E-Xell diathermy and large rotary converter, used four months. Reason for selling, formed partnership duplicating this machine. Can buy one or both. Address 109, care of this office.

Association or Partnership Wanted

A country practitioner of ten years experience with a good surgical training wishes to enter into relations with some practitioner having hospital facilities or the prospect of developing same with the object in view of co-operative practice. Address 102, care of this office.

Wanted at Once

Full time Eye, Ear, Nose and Throat specialist in well established clinic at Jamestown, N. D. Permanent location requiring no investment. Salary \$4,000 and up commensurate with ability. Personal investigation invited. Address W. C. Nolte, M.D., Jamestown, N. D.

Practice for Sale

A general practice in a town of 800 in North Central Minnesota. Invoice of equipment, \$400.00, which includes x-ray apparatus. One can make money from the start. Possession at once. Terms if wanted. Address 108, care of this office.

Laboratory Technician Wants Position

A graduate nurse with four years experience in all routine chemical laboratory work; also do x-ray, physiotherapy, diathermy, quartz, ultraviolet ray; sinusoidal and basal metabolism treatments. Address 112, care of this office.

Fine Location for a Physician in Minneapolis

Office for rent in one of the best locations in the city in South Minneapolis with dentist. For particulars communicate with M. T. Lundblad, 1523 East Lake Street. Telephone Dykewater 1243.

Position Wanted as Technician

By young woman who is a graduate of the School of Physiotherapy of Seattle. Three years of study and clinical experience at School Clinic. Can do urinalysis, diathermy, sine wave, deep therapy, actinic ray, galvanism, medical gymnastic and massage, and hydrotherapy. Address 104, care of this office.

German-Speaking Physician and Surgeon Wants Work

Has had four years hospital training, chiefly in surgery (general and gynecological) in Vienna; four years leading surgeon of a miners' hospital; surgeon during the World War; does also rhinological surgery. Best of references. Address 340, care of this office.

Good Location for Physician in North Dakota

House with office in connection for sale in a town of 500 in best section of Red River Valley and central to five other towns without a physician; 40 minutes drive to excellent hospital facilities; no competition; wide territory; price and terms reasonable. Am leaving to join clinic. Address 113, care of this office.

Locum Tenens Wanted

Recent graduate and Norwegian or German preferred to relieve one of a partnership for two months or more. Permanent connection as third man in partnership possible. Hospital facilities. Small Minnesota town. Address 114, care of this office.

Physician Wanted in Minnesota Village

The village of Gully, Minn., and vicinity wish to advise that after February 1, 1926, they will be interested in securing the location here of a doctor, as the man practicing here now is leaving after that date.

The opening here is an exceptionally good one, and the location has already proven itself from an earning standpoint which can be substantiated by the former doctor.

Gully is located in the eastern part of Polk County, Minn., is a small village with a large and prosperous farming territory surrounding it. It is located in the midst of one of the best dairying sections in the state.

The location gives the doctor who locates here a territory on three sides of its village of twenty miles north, west, and south and nine miles east to its nearest town where another doctor is located. Address Drawer B, Gully, Minn.

Wanted—Position by Laboratory Technician

Graduate of recognized school, capable of doing blood counts and chemistry, urinalysis, gastric analysis, tissue technic, and some bacteriology. Open for appointment January 1. Address 328, care of this office.

Technician Wants Laboratory Work Mornings in Minneapolis

Has had four years experience in large hospital and large clinic, and is now engaged afternoons in Minneapolis. Desires work in forenoons in this city. Address 335, care of this office.

THE JOURNAL-⁻LANCET

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SOME FUNCTIONAL DISTURBANCES OF THE COLON: A CLINIC*

BY E. L. GARDNER, M.D.

MINNEAPOLIS, MINNESOTA

I have dignified the clinic this morning by giving it a title. I might easily have called it, because that is the part I shall principally discuss, "Cathartic Disease" or "Bran Disease with Complications and Sequelæ." These cases do not present many physical findings, and there is no object in presenting the patients. We shall discuss some of the case-records and try to simplify the subject for clinical purposes.

Over 90 per cent of the patients who come to the general practitioner's or internist's office complain of gastro-intestinal symptoms but do not have gastro-intestinal disease. In other words, they have some functional disturbance of the gastro-intestinal tract due to other causes. The largest part of this group has many colonic symptoms, as indicated by disturbances of colonic function, constipation of various types, *diarrheas* lower abdominal distress, or reflex pain, and distress from the colon.

The term "constipation," I think, is often a misnomer. We say the patient is "constipated," and we frequently take his word for it and do not go into the subject as we should. "Constipation" should be reserved for those cases where we have decreased motility of the colon, especially that type associated with a normal-sized colon or with colonic dilatation. By far the greater number of the so-called cases of constipation are of the spastic type, and this is where we go astray in our management.

Briefly, we may say that the motility of the colon is the result of two forces: first, the peristaltic movement downward and, second, the resistance due to an uncertain amount of tonus of the circular muscle of the colon. This balance varies a great deal in the normal; and in diseased states or abnormal physiological states we may have a great disturbance of its balance. It is influenced a great deal by central cerebral factors, such as nervousness, or nervous strain, or psychic trauma, or what not. It may be influenced by reflex stimuli, such as reflex from the gall-bladder or stomach or duodenum, or reflex from other diseases. It may be influenced by various infections, focal infections, or various chemical poisons. It may also be influenced by the contents of the bowel, the type of food that is in the bowel, and so on, and also by various abnormal anatomical disturbances, enteroptosis, or looping of the colon.

A classification of colonic functional diseases is rather difficult but we have worked up a tentative classification, and I will throw it on the screen for you.

The *first group*, which includes the largest number of chronic cases, are those of so-called chronic, irritable colon, usually in the neurotic, visceroptotic person, although it does not always occur in this type. It may occur in any individual who is under a nervous strain and has not carried out the proper diet and hygiene. These patients usually have had a badly directed medical regime.

*Presented at Minneapolis Clinic Week, Minneapolis, April 30-May 2, 1925.

The *second group* are those cases with severe pain referred to the right lower abdomen. This is the big group that Lane talked so much about; the so-called "mucous colitis," "Lane's kink," and so on. These might be classed as the "anatomical group," but although these anatomical deformities have been accused of doing a lot of harm, and surgery has attempted to cure them, we all know that the surgical results have been poor unless there were very definite obstructive signs. Most of the symptoms are due, not to the anatomical defect, but to the management of the cases and the associated disturbance of motility in the colon, as well as the rest of the gastro-intestinal tract.

Group three includes those cases associated with colonic symptoms and nothing else; certain types of cases have a tendency to chronic diarrhoea with no other symptoms in either the upper or lower abdomen.

Group four is the large group, sometimes called the carbohydrate fermentative group. This group is characterized by the type of stool we shall describe a little later, and also by the fact that we have large amounts of gas in the intestinal tract, which is shown by passing gas from the rectum and by belching. These patients frequently have tachycardia, muscular twitchings, and pain, and are very susceptible to headache and vertigo. These cases can usually be suspected by their symptoms, and a diagnosis can be made by an examination of the stools. Many of them have symptoms of pruritus ani, and any patient with pruritus ani should be suspected of having a high acid content of the stools.

Group five is the migraine type, with "sick headaches" that come on periodically and usually are temporarily relieved by vigorous catharsis, but recur over and over again.

Group six is the vagotonic type with the over-acting vagus, often with spasm of all the sphincters.

Group seven comprises those cases that are dependent upon organic conditions, and *group eight* those due to toxemias, such as tuberculosis, focal infection, nicotine, etc.

Now, I might briefly read just the symptomatology of a few of these individual types.

The following case illustrates the first type such as occurs in the viscerotonic individual:

The patient is a housewife, aged thirty-one years, who presented symptoms as follows: Vomiting after meals for a period of three weeks, recurrent headache, extreme weakness, constipation, which had been always present, chronic cathartic habit, and marked malnutrition.

Her previous history is essentially negative except for this chronic gastro-intestinal symptomatology, which the patient thought was due to her constipation. Her diet had almost always been made up largely of coarse vegetables; she was taking large quantities of bran each morning for breakfast and had eaten bran muffins twice a day for years. In spite of this the bowels moved only by vigorous catharsis, and when she was first seen she was "unable to get anything through" even with catharsis.

Upon examination I found essentially nothing. She was malnourished and weighed 103 pounds. The colon was the "ropy" type and felt "full" under the fingers, except over the descending colon and sigmoid. The x-ray examination showed nothing except a markedly haustrated descending colon and sigmoid. The stools were of the small, marble-like type that descended and packed into the rectum, and she had difficulty in getting results from either food or catharsis. ("Baled hay" stool.)

This woman had had a lot of advice, both medical and otherwise, and most of it increased her symptoms. Instead of the large amount of rough foods and cathartics which she had taken for years she should have been put on a non-residue diet and taken away from cathartics, and the result might have been different. The results of treatment of this type are very satisfactory. This patient gained fifteen pounds in weight in six weeks and at the present time is not using cathartics and is having two or three mushy stools a day rather than any constipation.

Another type which is very common is that associated with so-called "sick headaches." They are very similar to, and difficult or impossible to differentiate from, migraine.

A patient, aged fifty-seven years, reported first late in 1922. She was rather a matter-of-fact woman who came into the office, sat down on the chair next to my desk, and without introducing herself said, "I am going to try it again." She had been "through the mill," in many clinics, had tried various "cures," but was still having her trouble. I felt rather uneasy in her presence and told her I could not do her any more good than anyone else, but she said, "Well, I am going to give you a trial." She had had headaches for years and had had the cathartic habit since she was a young woman. She had pain about the joints, indefinite abdominal distress, associated with more or less belching, and pain in the abdomen. She began to have headaches in her thirties, and was now having them every seven to ten days; the pain usually began on one side and spread to the rest of the head. Occasionally there was nausea and vomiting, and sometimes her vision would be so impaired that she would see only one-half of a vertical plane. Her head seemed heavy, and it was hard to concentrate her thoughts even between the attacks. She was relieved by numerous large doses of cathartics. When she came in she was taking two ounces

of castor oil twice a week in order to keep her mind clear and be able to keep on teaching. She had no other symptoms, and the findings, again, were essentially negative, except for the poor haustration and spastic condition of the descending colon. The stools were usually spastic, but at times mushy.

By taking her away from cathartics and putting her on the regime which I outline to these patients she has not had any headache, except once or twice since 1922. It has not been necessary to take cathartics, but she finds that she again has difficulty with her bowels if she takes too much foods which have large quantities of refuse, or too abundant in carbohydrates.

These are the two important types, but we must remember that organic disease in the gastro-intestinal tract or elsewhere may cause symptoms. Our treatment of organic disease and its symptoms by large quantities of magnesium sulphate, sodium phosphate, or cascara may bring on the same type of colonic symptoms if continued over long periods.

In the main the following points indicate an irritable colon:

First, the history is all-important and is by far the most important in making the diagnosis. Usually the symptoms are related to the taking of food, but the period of distress is indefinite. There is sometimes nausea, or belching coming immediately after meals or early in the meal; or the symptoms may come later in the day, indefinite in type and at irregular intervals. The distress is not always localized in the same place: it has a tendency to jump around to different parts of the abdomen. Often the symptoms are related to defecation; a good bowel movement will relieve the symptoms for a time, or a lack of evacuation will aggravate them. Usually the symptoms are increased by cold or chilly baths; and usually are increased by irritating foods, especially by excessively coarse foods. The ability of the general symptoms to vary from time to time, being more or less bizarre in type, is important.

The *physical findings* are very frequently that of a "ropy colon" in the lower left abdomen or of the transverse colon. It is not infrequent for patients to say they had a "tumor" in the lower right abdomen which disappeared just before they came in. Very frequently if we palpate we can feel this mass contract under the hand. Sometimes pressure over this tender "tumor" will produce reflex pain. A rectal examination should always be made. The rectum is normally empty most of the day. This is to rule out rectal constipation.

The *x-ray examination* is only of secondary

importance. The fluoroscopic examination, after both the opaque meal and the enema, watching the action of the colon, is more helpful; but the film helps some in the finer details of the diagnosis.

The *test enema* is of assistance. By giving one pint of warm tap water at a time and watching the symptoms, much information may be gained. If the symptoms in the upper epigastrium are reflex in origin it is not uncommon to have the enema bring out this pain during the injection. The water should be as warm as can be borne, and several pints should be used.

Next to the symptomatology the *stools* are of the most importance in making a diagnosis. It has always been strange to me that more stool examinations, macroscopic and microscopic, are not made by most men. It can be done without any difficulty, by any one after examining a few. Pediatricians have taught us the value of examining the stools in infancy, but because of some esthetic reasons, and of wrong ideas about information obtained from examining stools, it has been neglected in the adult.

We usually educate our patients as to what a normal stool is. Many patients who think they are constipated are poor eaters, and the sensations in the rectum make them think they still have contents in the colon. I argue with them that if they take a large dose of castor oil and have several bowel movements they may still have the sensation of wishing to pass more stools, but they "know the bowel is empty." These patients are usually light eaters, and the stools are very dry and small in quantity. They take a cathartic and get a fairly good clean-out. The next day they do not have a bowel movement, which they interpret as abnormal; consequently they again "take medicine." Very often the medical man encourages trouble by prescribing cathartics.

In the gross examination of the stool the form should be considered. The size of the stool is an indication of the size of the lower colon. It may be of small bore or nodular; or it may be unformed, in which case the peristalsis may be so great that the stool comes through liquid. It may be mushy, liquid, or waxy.

The color differs so much with the diet that it is only of assistance in telling what the patient has been eating.

Mucus is present in the stool normally, but not macroscopically with the naked eye. If you take a glass rod and insert it in the stool you will get a string of mucus. If this is large in amount this string is increased, or if it can be seen with the naked eye we know it is increased.

Then the reaction may be acid or not acid. This is of importance in differentiating the fermentative from the non-fermentative. If you give a big dose of castor oil or some other cathartic the stool may temporarily become acid when it was alkaline before. The benzidine test for occult blood is positive in most cases where the stools are not controlled by diet; the guaiac test, if positive, usually indicates some organic condition with bleeding.

Microscopically, we see vegetable cells and hairs, and the novice sometimes makes mistakes and calls these parasites. Partly digested or indigested starch may be present. We may see meat fibers; normally the striation should be partly gone or completely digested. We look for fat, but free fat globules should not be present; fatty acid crystals may be present. We see crystals of various types,—phosphates, cholesterol, and so forth.

Treatment: (1) Education of the patient. Where we have atonic constipation we may allow them to go ahead with cathartics if necessary, but preferably we use coarse foods. In the spastic cases the patients should not be given bran or irritating foods. The health columns in the newspapers and the advice of doctors who obtain their therapy from "detail" men exaggerate the symptoms of these patients, and are many times at fault in making chronic cases. How true it is that these people often take up Christian Science, forget about their constipation, eat what they wish, and their symptoms all disappear. For treatment, put them on concentrated food; usually the most concentrated first and then gradually build them up as they can take it. Later add one of the green vegetables and a little bit of fruit, depending entirely upon the condition of the stool, using it as a gauge to direct diet. To a certain extent we can use the symptoms as an indication, but they are not as dependable as the stool. In addition, we use heat to the abdomen and have the patients drink hot water and in severe attacks hot saline enemas. If, in spite of this, they do not get results, for a short time we inject warm olive oil every other day (any of the cheap salad oils or cottonseed oil). This is usually given at night when the patient goes to bed. The hips are elevated a little, and then the next morning the patient tries to have a stool upon arising. If the stool does not come by noon we allow these patients to take a small warm-water enema, half a pint at a time preferably and never more than a pint, and repeat if they do not get results. We specify that these patients shall not take these oil injections oftener than once



VARIOUS TYPES OF STOOLS

Figure 1. A constipated stool with the patient on an average diet. Such a stool does not produce any symptoms except possibly the sensation of weight in the rectum and a tendency to fissure or hemorrhoids formation. A patient with such a stool does not have any of the symptoms of bowel irritation.

Figure 2. A stool from a normal patient who is taking large quantities of rough food but is not having any symptoms whatsoever. Note that the stool appears to have a lot of rough material; however, this stool is formed and has a uniform caliber. A patient with such a stool over a period of months or years is likely to begin to have symptoms of bowel irritability and is simply an indication of the patient taking too much rough food.

Figure 3. A normally formed stool in a patient without symptoms, but where the diet is more of the concentrated type. Notice that it is uniform in size, is a formed cylinder, and keeps its shape.

Figure 4. The "baled-hay" stool. This stool is very frequently called constipated, but is really due to a spastic condition of the distal colon which passes hard spastic balls into the rectum. The rectum accumulates these small balls and forms them into a large lobulated mass. In other words we have a combination of a spastic descending colon with a comparatively insensitive rectum. These patients sometimes have fecal impaction in the rectum.

Figure 5. A spastic stool which has been expelled from the rectum as soon as it has been delivered to it by the colon. Notice that this stool is similar to that of the "baled-hay" stool except that it has not been compressed into a large mass. Both the "baled-hay" stool and the spastic stool indicate an overactive descending colon, but the longitudinal peristalsis is relatively less than the circular muscles resistance, and we have a delay of the stool in this part of the bowel with an unusually large absorption of water. These patients are the ones who have the most symptoms and are usually the ones who are so poorly and improperly treated.

Figure 6. A mushy stool. This stool indicates that the peristalsis is relatively more active than the circular resistance and the stool comes out in a soft condition. It also indicates that the rectum is probably normally emptying itself.

The fermentative stool is usually either a mushy stool resembling Figure 6 or a softly formed stool resembling Figure 2. However, if we closely examine the fermentative stool we notice a large number of gas bubbles giving the stool a spongy consistency. Because of the gas content these stools very frequently float in water. They are strongly acid to litmus, and have a penetrating sour odor. Microscopically they usually contain large quantities of indigested starch and also a great deal of vegetable residue from the food.

every second or third day, in order to give the bowel a chance to fill.

In addition, there is a prescription which we give (calcium carbonate and calcium phosphate, each ten grains.) The calcium carbonate must be perfectly pure, and there is only one preparation on the market, and that is Merck's reagent. Sometimes we vary this by adding a little extract of belladonna, one-tenth to one-sixth grain to the dose. In the neurotic individuals we sometimes

add luminal or give it independently. In some cases we use bromides. The calcium is of assistance in forming the stool and probably in causing a certain amount of relaxation of the muscle spasm.

This is essentially the treatment. The patients rapidly gain weight and are the most satisfied patients we have. I have a few copies of the directions both for the acid and non-acid type of irritable bowel which I shall be glad to pass around for those who wish them.

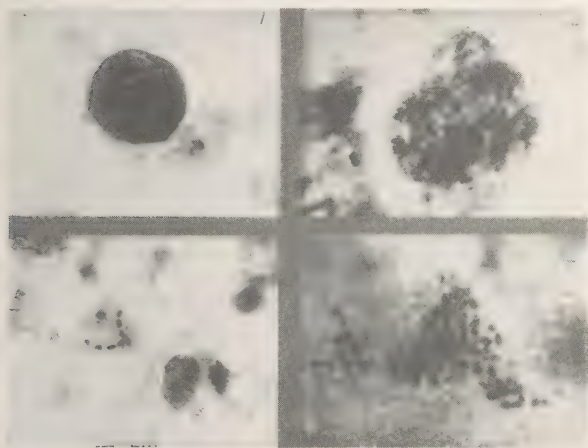


Figure 1. (High power.) An indigested starch granule (stains a dark blue with Lugol's solution).

Figure 2. A partially digested granule (stains a deep mahogany color with Lugol's solution).

Figure 3. (A) A group of clostridia. (B) A partially digested muscle fiber.

Figure 4. Clostridia under an oil immersion objective. Notice that these organisms are much larger than ordinary bacteria. These organisms occur only in the fermentative type of stools, which also contain a large amount of indigested starch and are strongly acid to litmus.

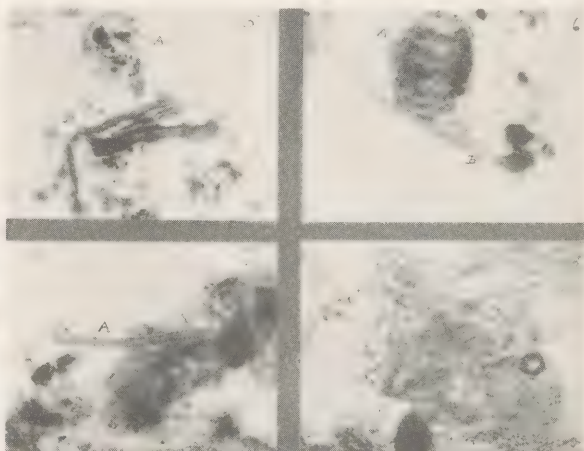


Figure 5. (A) An almost completely digested starch granule. (B) Vegetable fibers.

Figure 6. (A) A partially digested starch granule. (B) "Hair" cell from vegetable matter. These have frequently been confused with parasites, by those unfamiliar with stool examinations.

Figure 7. (A) Spiral from vegetable matter.

Figure 8. Fatty acid crystals.

Photomicrographs of diluted feces stained with Lugol's solution.

DIFFERENTIAL DIAGNOSIS IN UPPER ABDOMINAL DISEASE*

By RICHARD CRANMER, M.D.

MINNEAPOLIS, MINNESOTA

Experience has taught us that pain may be referred to a distant point from the site of the true pathological condition; therefore it happens that pain in the abdominal wall may have its origin elsewhere and that pain with its origin in some abdominal viscus may be referred to another and remote region. These facts impose on us the duty of deciding, when confronted by a given case betraying a picture of intra-abdominal disease, whether the pain is in reality of intra-abdominal or extra-abdominal origin, and

what is the nature of the pathological condition present. In this paper I shall mention some of the extra abdominal conditions, in which pain is referred to the abdominal wall, and which are frequently mistaken for intra-abdominal conditions; but the main purpose of the paper is to recite the symptoms of some of the more common acute and chronic lesions of the abdomen, considering especially the differential points and tests at hand which help in making a diagnosis.

Within the last years there has been a great increase in the number of reported cases of *acute pancreatitis*, which proves that the symp-

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tom complex is becoming more familiar to the medical profession. But a pre-operative diagnosis of acute pancreatitis is more rarely made than any other abdominal condition. There is no one definite pathognomonic sign or symptom, and, furthermore, it is nearly always seen in individuals who have had severe abdominal disorders and frequently the extreme desperate condition of the patient necessitates surgical intervention before a definite diagnosis can be made. Diagnosis is possible if the patient is seen within the first forty-eight hours. The onset is sudden, characterized by excruciating pain, persistent vomiting and signs of collapse. Neither the abdominal distention nor the rigidity is so pronounced as in other acute abdominal conditions. Deaver states that he is of the opinion that many of the conditions diagnosed as acute indigestion, abdominal angina, etc., where the patient gives a history of having eaten excessively, is stricken with sharp, acute epigastric pain, followed by depression which lasts only for a short time and recovers in a few days, are instances of mild, acute pancreatitis. The pathology in these cases is a very slight punctate hemorrhage into the pancreas. The history is important because most cases of acute pancreatitis will give a history of having previously had gall-stones. A sudden, acute abdominal seizure, overwhelming pain, in an apparently healthy, usually obese individual, accompanied by incessant vomiting, upper abdominal distress, a transverse resistance not easily elicited, weak pulse, rise of abnormal temperature, collapse, and sometimes cyanosis, should suggest acute pancreatitis. Bearing in mind the difference between the intensity of the symptoms and the slight distention and slight rigidity of the abdomen, one should at least think of this condition, especially when the patient is apparently healthy and the attack has come on soon after eating a heavy meal.

Bartlett states that the condition of acute pancreatitis should always be thought of in acute upper abdominal disease in which the symptomatology is not definitely that of any of the ordinary disorders. In *perforating ulcer* of the pylorus one has the history of pain on food ingestion or soon after and frequently hemorrhages into the bowel. The rigidity of the abdominal muscles in a perforating duodenal ulcer case is extreme and is frequently the outstanding physical sign. In the case of perforating ulcer the patient will frequently come with a diagnosis previously made and an *x-ray* report to the effect that he has had an old ulcer in the duodenum. In acute *appendicitis* one frequently has the his-

tory of previous attacks, the attack coming on gradually and the pain first being general over the abdomen. This pain localizes in the lower right quadrant on about the second day, and then the muscular spasm, McBurney's sign, and all the other signs of acute appendicitis become positive. At this point I would like to enumerate and describe, briefly, some of the signs and tests at hand which help in diagnosing appendicitis.

1. McBurney's sign, which is tenderness on pressure over McBurney's point: This sign is probably the most valuable of all signs, as well as the most frequently used. It may be said, however, that at times it is not reliable even when symptoms and some of the other signs of appendicitis are present. In fact no one sign in itself definitely indicates the presence of appendicitis. It is only by considering all the signs and tests, as well as the symptoms and the history, that one can arrive at a proper diagnosis.

2. Meltzer's sign: The examiner's fingers are first pressed deeply over the site of the appendix, thus catching it between them and the muscles of the posterior wall of the abdomen. The patient is directed to flex the hip on the body with the knee extended. This action rendered the psoas rigid in contraction thereby increasing the pressure upon the appendix. In the presence of an inflammation of the appendix, pain is the result.

3. The muscular spasm which is elicited on pressure over the site of the appendix: Next to McBurney's and Meltzer's signs I consider this sign most important. A patient will involuntarily protect an area of severe tenderness during palpation of the abdomen. When dreading the diagnosis of appendicitis and its usual sequence, patients will sometimes attempt to fool the examiner by saying that it is not tender on the right side and it is in such cases that this sign is especially valuable, because, if present, it enables the examiner to discount the patient's statement. This sign, unfortunately, is valuable only in acute and subacute cases and may be entirely absent in chronic inflammation.

4. Deep inspiration sign which is merely a sense of soreness at McBurney's point when the patient takes a deep breath: This is of value only in acute appendicitis. It is also positive in acute cholecystitis and other acute inflammatory conditions of the abdomen, but it is most marked when the peritoneum is involved. In conjunction with other tests it is of value.

5. The gravity sign, which is of value in acute appendicitis only and is positive when the patient has more pain when lying on the right side than

on the left, the weight of the abdominal viscera pressing upon the appendix causing the pain.

6. The rectal-tenderness sign, which is positive when the finger inserted into the bowel causes more pain when pressing up and to the right than when pressing up and to the left. This sign is of special value in children, it being possible in that instance to reach to the vicinity of the appendix. Frequently the mass can be felt in the right iliac region when an appendiceal abscess is present. It is inexcusable to neglect this test in children especially, and it is most valuable in many adult cases.

7. Bastedo's test is of considerable value in subacute and chronic appendicitis, and helps differentiate appendicitis from stone in the right ureter and from right-sided salpingitis. The test consists of distending the lower bowel with air by means of a Politzer bag attached to a rectal tube and noting the progress of the air by percussion as it travels up the descending colon across the transverse colon and down the ascending colon. At the time the cecum becomes distended, a sense of nausea or pain is evidence of subacute or chronic appendicitis. We have used this test in all of our suspected subacute and chronic appendices at the General Hospital for several years and have found that where it was distinctly positive we have always found an inflammation present at operation. I wish strongly to recommend this procedure in all such cases. Doubtless the frequent nagging pain experienced by patients with a chronic appendicitis is in part due to the distention of the cecum by the intestinal gases.

8. Rovsing's test is identical with the Bastedo test in principle, and is described as follows: (This is as it was described to me by a doctor who assisted Rovsing in Copenhagen and who states it was routinely used by him in all his suspected subacute or chronic appendicitis cases). The patient standing, the examiner presses deeply over the sigmoid area and gradually elevates the pressure in line of the descending colon, then follows the transverse colon across the abdomen to the hepatic flexure. Thus the fluids and gases of the large bowel are forced back to the cecum which distends and gives rise to the pain or nausea in the presence of appendiceal irritation.

9. Blumberg's test is the old peritoneal irritation test. It is used to determine the presence and extent of peritoneal inflammation. The sign is positive when the pain, on release of pressure over a given part of the abdomen, is greater than the pain on pressure. If the pain is more severe on releasing pressure than on pressure itself it

indicates a peritoneal irritation or inflammation the extent of which can be outlined by repeating the test at various places and marking the points at which the release of pressure is less painful than the pressure itself. This has proven to be a most reliable sign, and is one we routinely use in acute abdomens. One can thus determine whether there is a general or localized peritonitis complicating the condition.

10. The flexed-knee sign: In the presence of abdominal inflammation a patient will unconsciously flex the thigh on the body on the affected side. He does this usually by flexing his knee and allowing his foot to rest on the bed. This is a valuable sign and is explained by the fact that when the psoas and also the oblique muscles of the abdomen are relaxed less pressure is brought to bear at the point of inflammation.

11. Murphy's sign is of value in acute appendicitis only and is positive when the patient experiences pain at McBurney's point when pressure is exerted over a corresponding point on the left side. The pressure merely forces the viscera over to the right side, increasing the pressure at the point of inflammation, thereby causing pain.

Acute conditions within the abdomen are counterfeited most often perhaps by pneumonia, which may simulate the symptoms produced by appendicitis, gall-stone colic, or perforation of an ulcer. To those who have never seen the perfect mimicry of appendicitis by pneumonia, even the possibility of such a thing is hard to conceive. Yet there are few large hospitals in which patients with pneumonia have not been operated on in the belief that the correct diagnosis was appendicitis. In a series of 145 cases of lobar pneumonia sent to the Boston City Hospital, 25 of the patients were admitted with a diagnosis of appendicitis. The leucocyte count often gives no help; yet more than 20,000 white cells per cubic millimeter is a rare finding in appendicitis, and is suggestive of either pneumonia or a large pus collection elsewhere in the body. Even a simple pleurisy may produce pain in the abdomen completely overshadowing, unless a thorough examination is made, the trouble in the thorax. This counterfeiting of appendicitis by pneumonia and pleurisy is most frequently seen in children.

Pericarditis and coronary thrombosis may produce severe epigastric pain and, occasionally, shock and vomiting. In fact the symptomatology of coronary thrombosis may very closely resemble that of gall-stone colic, perforated ulcer, and acute pancreatitis. Careful examination may show absence of epigastric tenderness in the coronary affection, perhaps a pericardial friction

sound, and slight fever. In addition there is usually a history of precordial pain or distress and even of genuine attacks of angina pectoris. It is, of course, well known that the pain of true angina pectoris may be referred to the abdomen, in the region of the gall-bladder. Other extra-abdominal affections which may cause what appears to be an acute abdominal syndrome are tabes dorsalis, uremia, lead poisoning, hysteria and, strangely enough, herpes zoster. The gastric crises of tabes dorsalis may simulate gall-bladder colic or intestinal obstruction. Since they sometimes appear before locomotion, station, or sight is interfered with, they may be misinterpreted. Uremia is capable of mimicking almost any disease, including acute conditions within the abdomen. The symptomatology is frequently that of intestinal obstruction. Lead poisoning may be mistaken for intestinal obstruction. There are cases of lead poisoning on record which were operated on for that condition. There are frequently absolute constipation, severe abdominal pain, fecal vomiting, and low temperature, with signs of collapse. Hysteria may also feign acute conditions within the abdomen. Spinal caries is another extra-abdominal condition in which pain is referred to the abdominal wall. The presence of this condition can be determined by *x*-ray and other symptoms.

However confusing the above-mentioned acute conditions may sometimes be when one attempts a diagnosis there are conditions of a more chronic nature which are sometimes equally as confusing. They belong to that group presenting gastric symptoms chief of which are chronic pyloric ulcer, cancer, and chronic gall-bladder disease.

Chronic ulcers of the duodenum and pyloric end of the stomach give symptoms that, as a rule, vary in degree only, and often so little that one usually finds greater trouble in differentiation than in making the diagnosis of ulcer. However, as the lesion recedes toward the cardiac end of the stomach, the clear-cut symptoms lessen, and their peculiar pathognomonic character may be lost where the ulcer is definitely away from the pylorus. The histories of these cases applying for treatment usually cover a more or less prolonged period of time, and show that for much of the time the periods of attack and freedom from symptoms alternate.

Early in the history the appetite remains good, nutrition does not fail, and food brings immediate relief from symptoms. The pain, gas, sour eructations, nausea, and vomiting return one to four hours after meals. During the period of attack this precise relief of symptoms by food

or drink, and their regular return from one to four hours later, are peculiarly characteristic, and continue so until the advent of complications seriously interferes with the gastric function.

Another stage of the trouble may be considered as beginning after many periods of attacks. The peculiar characteristic symptoms remain, but are less definite. The attacks are more severe and prolonged, appetite may fail, or food is not taken because of pain, gas, distress, vomiting, sour eructations, and burning in the stomach; food and drinks relieve, but the time of relief is shortened, and later, pain is increased.

Vomiting may replace eructations, and give relief, as does irrigation of the stomach. Nutrition decreases, not so much because of lessened appetite, but because of fear of the returning gastric distress.

Ease comes for a time from food or drinks, vomiting, irrigations, and alkalies, and pain relapses when the acid condition returns. The symptoms, as vomiting, gas, sour eructations, etc., may appear in other conditions, such as appendicitis, gall-stones, cancer, etc., and are, therefore, not the characteristic point. The characteristic point is the time the symptoms appear, and their regularity after meals, and the equally ready control of symptoms by food or drinks, irrigation, or vomiting. This regularity and control of symptoms, meal after meal, for days and weeks during the period of attack, is scarcely approached by any other organic or functional disorder. Later, when complications appear, the symptoms change. Food may not give ease, but rather increase the distress, which may become continuous. Vomiting occurs perhaps less often, and is more copious and gives partial relief. Appetite and nutrition fail. The early, regular, characteristic history gives us a key to the diagnosis when we are in the presence of the chronic, complicated stage of ulcer development.

Cancer: In developing histories from those suffering from gastric cancer, it is found they fall in three classes: first, those in which the disease seemed to appear suddenly during the enjoyment of perfect health; second, those in whom an attack or attacks in earlier years are definitely stated, and who, for years, have been well until sudden, grave symptoms appear; and, third, those who, for years, had typical attacks of gastric ulcer. Whether or not a cancer frequently develops on the base of an old ulcer is a very much-disputed point to-day with the preponderance of evidence indicating the negative, but, nevertheless, such histories as described above are frequently obtainable in gastric cancer.

In the first and second classes we may find a tumor on palpation, and symptoms of previous chronicity very acutely developed. We find those cases whose chief complaint is only a weak feeling and who only become alarmed because a lump has been discovered in the epigastrium. Others complain of languor, weakness, and loss of appetite and weight, but no tumor palpable. In this class of patients the test-meal is especially helpful in making a diagnosis. In the third class of cases, in which the symptoms have been only those of ulcer, the diagnosis is still more difficult. When cancer is once established in the stomach the course is usually progressive and steadily downward, and remissions are few. Pain is quite a constant symptom, though less pronounced than in ulcer. It is less acute, more continuous, and usually intensified on food ingestion. It is epigastric, and tenderness is not common. Vomiting is more delayed, more copious, and is usually blood-tinged, and gives great relief, though rarely as great relief as in ulcer.

Gas and distention becomes more noticeable and distressing; appetite is lessened and later lost, or even a disgust for food appears. Emaciation comes on rapidly; pallor, anemia, and weakness are progressive. With all this there is a mental depression. The mental attitude is reflected in the facial appearance and gives the characteristic picture so often seen in patients suffering from malignant disease.

Gall-stones and cholecystitis: In gall-bladder disease there are, first, those cases of mild disturbance, usually gastric and often lightly considered by the patient. There are light attacks of distress, gas, upward pressure, coming on soon after eating or at irregular times, often of sudden onset, of short duration, eased by belching or vomiting or slipping away almost unnoticed and without treatment, though various things may get credit for effecting the relief. These sudden, irregular, mild gastric-like attacks are quite as typical of gall-bladder disturbance as are the severe typical attacks, which, as a rule, supplant the mild ones.

There is another and second set of cases with more or less prolonged pain in the epigastrium or right arch. This pain may increase on food-ingestion, exertion, or motion; deep respiration gives pain and can, at times, readily be mistaken for pleurisy if located over entirely on the side. These patients may pass through prolonged steady attacks, pain being worse at times, and then they may enjoy a long period of perfect health. During an attack gastric symptoms are prone to be present, and but for this irregularity,

as compared with ulcer, one might easily consider the condition of stomach origin.

In a third set of cases are found the great number upon whom the correct diagnosis falls, and in this class surgery has found its greatest activity and rewards its use by giving great relief. Here we have the so-called typical gall-stone attacks,—sudden, severe epigastric pain, with radiation to the right arch and through to the back or scapular region, spasm of the diaphragm, upward pressure, gas, nausea, and vomiting, and after a longer or shorter terrific spell come suddenly a relief of symptoms and return to perfect health. These attacks come irregularly—night or day—and often bear no relation to food.

The fourth set of cases presents symptoms of chronic gall-bladder trouble,—adhesions, duct obstruction, perforation, contractions, and duct infections with pancreatitis. Often in this class chronic gastric disturbances predominate, and the picture is so closely related to chronic ulcer with complications that a differential diagnosis cannot be clearly made if only present symptoms are considered. At this stage the key to the diagnosis depends on the development of the early history.

In the three preceding conditions,—ulcer, cancer of the stomach and gall-stones, the differential diagnosis is very often made easy by the use of *x*-ray plates and fluoroscopic examinations. The filling defect in cancer and ulcer and the gall-stone shadows on the plates tell us a great deal. In about 50 per cent of patients suffering from gall-stones the shadow can be demonstrated, and in a much larger percentage of cases suffering from ulcer or cancer the filling defects are obvious. The newer test (the tetraiodiophenolphthalein test) which renders the gall-bladder visible in *x*-ray plates when there is no cystic-duct obstruction is of great and true value in suspected gall-bladder disease, as is also the various other tests at hand, for example, van den Bergh's test.

Chronic recurrent appendicitis is another condition giving stomach symptoms. Here there are no appendiceal tenderness, no pain at McBurney's point, no fever, no tumor, and no symptoms that usually mark appendicitis, except those referred to the stomach. There may be epigastric pain or diffuse pain, gas, vomiting, and sour eructations, but when compared with peptic ulcer they are irregular, and when gall-stones are considered the attack is too prolonged. There is no regularity, meal after meal, as in pyloric ulcer, and rarely does food give ease. There is no clear-cut, day-by-day repetition of pain, as in ul-

cer, and no attacks like gall-stones of definite location of pain.

Syphilis, when it attacks the stomach or liver, may clearly simulate ulcer of the stomach or gall-stones, and, when advanced, the pain, cachexia, and vomiting may lead to a strong suspicion of cancer of the stomach. The vomiting of crisis may mislead; however, the attacks are peculiarly sudden, the vomiting is irregular, often soon follows ingestion of food, but appears if total abstinence is practiced. Perhaps little pain, not so often sour eructations, no hunger-pain, no food relief, or other characteristic of pyloric ulcer, are present. The attacks cease as abruptly as they begin, and no signs of trouble remain; no regularity of ulcer; no picture of gall-stones. A history of specific infection, shooting pains of a more or less general nature, and other specific signs will cause the physician to hesitate. Specific treatment often clears up the diagnosis.

Pernicious anemia is often most difficult to differentiate from ulcer and cancer. Unless the blood-findings are definitely positive one is often

at a loss in deciding. There may be a loss of appetite in both.

Dyspeptic symptoms, but not the dislike of food, come with anemia. The vomiting of cancer and ulcer is usually absent. In cancer and anemia there may be shortness of breath, pain, and palpitation on exertion, which conditions are more marked in anemias than in cancer. Rest gives perfect physical ease in anemia while in cancer the symptoms do not usually yield to absolute quiet. There is less emaciation in anemia, and the skin is more apt to be lemon-yellow than merely pale. The absence of hydrochloric acid and the presence of blood are quite apt to be seen in both. The examination of the blood is invaluable. In pernicious anemia the hemoglobin is low, the red count low, and the color-index high. In cancer the hemoglobin test is frequently high, due to dehydration of the blood; and the color-index is usually about normal. Staining of the blood and the discovery of the distinctive cells of pernicious anemia will usually establish the diagnosis. The *x*-ray, of course, is of inestimable value in this differentiation.

TWO CASES OF PULMONARY TUBERCULOSIS AND THEIR RELATIONSHIP TO THE PRACTICING PHYSICIAN AND PUBLIC HEALTH*

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The early recognition and treatment of pulmonary tuberculosis have an importance to individual and public health that has long been stressed by authorities. The sanatorium worker often has wished for the opportunity to treat cases in the incipient stage while the physical and toxic findings are minimal and the opportunity for the arrest of the process is greater than in a later stage. With this period of the disease this report is concerned, and includes the diagnostic problems encountered and their relationship to public health. From the standpoint of both individual and community health, the period before sanatorium treatment is instituted has been considered of paramount importance.

Two cases here reported afforded the opportunity to observe the cycle of the disease, in at least its main clinical features, from the time the

patient first reported to the dispensary or physician until sanatorium treatment was instituted.

CASE 1 (Dispensary No. 52056).—Woman, aged 32, single, a cook. Observed first on September 19, 1924, complaining of weakness, abdominal pain, constipation, and loss of weight over a period of two months. The family history revealed that one brother had died of pulmonary tuberculosis at nineteen years of age. Previously, at twenty-four years, the patient had had acute rheumatic fever with another confining attack one year later. Attacks of sore throat had occurred at infrequent intervals before tonsillectomy in 1923. From childhood, the patient has had a goiter, but it is smaller at the present time. The patient supported herself and daughter by domestic work. The present illness started two or three months previously with weakness, abdominal pains, and constipation. Loss of weight amounted to twelve pounds. Moderate chest pains, chiefly on the left side, occurred for the last few months. Physical examination showed slightly impaired resonance in the right upper anterior and posterior regions with a few râles heard at the right of the sternum. Temperature was 101.4°;

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pulse, 100. Stereoroentgenograms of the chest were negative; one week later the temperature was 99° and the pulse 120. No râles were heard. Three sputum examinations were negative for tubercle bacilli. Three weeks later the temperature was 98.6° and the pulse 108, and the patient felt better. On account of moderate diffuse thyroid enlargement, tremor of hands, and tachycardia, she was referred to the thyroid clinic. There the impression gained was that of the toxemia of tuberculosis rather than of hyperthyroidism. The basal metabolism was 26 and 27 per cent above normal on two occasions. The Larson ring test was positive. For more accurate observation the patient was admitted to the University Hospital on December 5, 1924, for ten days. During this period the temperature was never above normal, and the pulse averaged between 70 and 80. The patient's strength returned, and she resumed her work as cook in a restaurant. No diagnosis was made on her discharge from the ward. Three months later the dispensary records show her return with loss of weight and appetite, epigastric distress and hyperidrosis. No conclusion was reached at this time. The patient did not report for another two months, when she was admitted to the University Hospital with extensive pulmonary tuberculosis involving both upper lobes and with tubercle bacilli in the sputum.

Careful study by more than one physician in the dispensary and hospital had failed to disclose the diagnosis in the incipient stage of the disease. Hyperthyroidism was suspected as the source of the toxemia, and, indeed, the laboratory finding of increased basal metabolic rate so indicated. But the sum total of clinical findings were thought to point to pulmonary infection. Such findings included the asthenic state of the patient without the nervous symptoms of hyperthyroidism and the finding of fever, flushed cheeks, and transitory apical râles.

This case illustrates the difficulty encountered in the early diagnosis of tuberculosis in dispensary and hospital with observation by divisional clinics including chest, gastro-intestinal, and thyroid. The important findings were disclosed by careful physical examination and not by laboratory tests only. Certainly the regional examination of the patient would have been insufficient without correlation of findings by a physician who could view the human organism as a whole and realize that disease may have its manifestations referred to various organs and systems.

Case I, which may be taken as a type case, illustrates the strategic place held by the physician who first sees the tuberculous patient, for upon his early diagnosis hangs the greatest opportunity for the arrest of the disease. Likewise the protection of the health of the other members of the family and even of the community becomes, in great part, his responsibility. Other agencies have been suggested to take over such responsibility. Clinics conducted by expert examiners are carried directly to the people. The

single examination by the clinic, no matter how efficiently given, has the limitations of any single observation, which can be circumvented only by the local physician who has the opportunity to examine and re-examine the patient. The type case presented certainly had multiple examinations before the disease was detected. Even without expertness in chest work, but with reasonable care, the physician may prove himself, on account of his early observation of the patient soon after the first symptoms, to be of far greater potential good to the individual and community than the flying expert seen once a year.

CASE 2.—K. W. C., a man, aged twenty-four, single, clerk.

Patient came under observation January 18, 1924, and was admitted to the Asbury Hospital the following day, complaining of chills, fever, and weakness. The onset of symptoms was about December 25, 1923, with malaise, fatigue, and slight headache without respiratory tract symptoms.

About January 10 chills and fever first occurred. There were no night sweats, no palpitation, and no sputum. Examination showed fair nutrition, the temperature at 101.6°, and the pulse 90. At the base of the left lung posteriorly there was slight relative impairment of resonance. Tactile fremitus was slightly increased. Whispered voice was not appreciably altered. Breath sounds were more intense than normal but vesicular. Occasional sibilant râles were heard. Later a few fine crepitations were heard and interpreted to be of pleural origin. The stereoroentgenograms of the chest showed a wedge-shaped area at the left base which was interpreted by the roentgenologists to represent either a small interlobar effusion or pulmonary abscess, with the weight of evidence in favor of abscess. The white blood cells numbered 7,400 with 74 per cent of polymorphonuclear leucocytes. The urine showed numerous pus cells.

The temperature dropped from a maximum of 103° shortly after admission to a maximum of 99.4° for two days preceding discharge, and the pulse to a minimum of 80. After three weeks rest in bed the patient was discharged on February 6 to continue rest at home. A positive diagnosis was not made. The possibilities considered were: (1) residue from old pleurisy and unresolved pneumonia, (2) pulmonary abscess, and (3) pulmonary tuberculosis.

The patient was seen about six weeks later after having resumed work for two to three weeks without medical advice. Fever, cough, and sputum were present, as well as numerous râles at the right base. The sputum contained tubercle bacilli. The patient was shortly admitted for hospital and later sanatorium treatment. There was marked progression of disease, and death occurred some seven months later.

While the tuberculous nature was not proven during the first phase of illness, partly on account of the atypical location of the lesion at the base of the left lung, the treatment instituted within three weeks of the onset of symptoms consisted of rest in bed and increased nutrition. Except for a period of a few weeks away from

medical observation, the patient had had proper hospital care since the onset of symptoms. The course of the disease was progressively downward. This case demonstrates that the indefinite nature of the symptoms of pulmonary tuberculosis may often direct the patient to the general practitioner or internist for a general examination.

If the strategic importance of the practicing physician is recognized in the control of tuberculosis, means should be used to support and encourage him. The best manner of accomplishing this has been made a careful study by educators and health workers in the medical profession, and no attempt here will be made to analyze the problem. The student should be thoroughly taught tuberculosis, not, however, as a specialty, but as a disease which is understood best by the physician who has a good comprehension of other diseases. For the physician, all of those means whereby he augments his store of information, such as by attendance at societies and clinics, should be made available. The health organizations might profitably increase their energy expended toward securing co-operation with the physician in the fight against tuberculosis. His interest may be dissipated by the importation of examining physicians, which tends to undermine the confidence of his patients in him, and by the loss of the control of his patient after his return from the sanatorium with an arrested process. If, in certain localities, the situation demands the special examiners, the temporary nature of such a policy should be recognized. Such policy is palliative and not curative since it is a fundamental fact that the qualified physician on the

ground is the natural guardian of individual health. Certainly out of the confidence of the patient in the local physician grows the habit of frequent examination for minor complaints which may be the first signs of serious disease. Such frequent examinations afford the greatest opportunity for the early detection of disease. Out of the patient's confidence in the physician grows the latter's inspiration to maintain his qualifications at a high standard.

Without the trust of the patient in the physician, ideal conditions exist for the growth of the charlatan, the quack, and the irregular. Such medical anarchy, if allowed to develop, would probably finally react toward State medicine which we believe is inimical to the best interests of the public and the physician.

SUMMARY

Two cases are reviewed which show the diagnostic difficulties encountered in the early stages of pulmonary tuberculosis. It is suggested that the practicing physician occupies a strategic point in the combat with tuberculosis, both from the standpoint of the patient's welfare and of the public health. Any measure such as sending clinics directly to the people is only palliative and may, in some instances, destroy the confidence of the patient in the local physician and favor the growth of quackery and its attendant evils. Therefore, all means should be used by the propagandists in tuberculosis work to build up the confidence of the people in the physician and, if necessary, to strengthen and encourage him to be worthy of that confidence.

THE LABORATORY DIAGNOSIS OF TUBERCULOSIS*

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The primary aim of the laboratory in the diagnosis of tuberculosis is the finding of its causative agent in a given specimen regardless of its source. In a limited sense, the efficiency of a tuberculosis laboratory may be measured by the percentage of positive demonstrations of tubercle bacilli in the specimens from clinically tuberculous patients and only secondarily by that of positive collaborative evidences, such as the complement fixation tests, cytologic and chemical examination of body fluids, etc.

How many sputa, thoracic and spinal fluids, urinary specimens, etc., which literally harbor hundreds of tubercle bacilli, are being reported "negative," no one is prepared to answer. It is the endeavor of every conscientious laboratory worker to minimize the number of these so-called "negatives" which, though probably pardonable, must be regarded as a low index of efficiency.

The present communication has been prepared, not in any way to advance new methods in the laboratory diagnosis of tuberculosis, but to enumerate a few practical points in the examination of various specimens which may materially re-

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duce the percentage of "negatives" or "failures" and thus increase the efficiency of the laboratory in the diagnosis of tuberculosis.

With due respect to every refinement in the technic of demonstrating tubercle bacilli, too great emphasis cannot be laid upon the importance of conscientious and diligent search for the bacilli on the direct smears of the selected material in a properly collected and preserved specimen. A few words of warning are in order to those who immediately resort to a so-called concentration method without due regard to the character of the specimen submitted. Pottinger places fifteen minutes as the maximum time for the search of the bacilli in the direct smear of the fresh sputum. However, no time limit, in my opinion, should be set in the search of tubercle bacilli in the spinal fluid, thoracic fluid, urine, or even in the sputum.

It is a priceless reward and the delight of a laboratory worker almost accidentally to encounter one single acid-fast bacillus in the seemingly miles of vast and vacant microscopic fields after a painstaking search of many minutes or even hours. This has been our repeated experience with the spinal fluid, thoracic fluid, exudate, and urine, as well as with the sputum.

The point is that above the refinement of technic there is the native virtue of patience, diligence, stubbornness which contribute largely to the success of a laboratory worker.

The Sputum.—Emphasis must be placed upon the proper collection and preservation of the specimen which often predetermines the success or failure of the examination. The full co-operation of the attendants is absolutely essential. Selection of the suspicious, cheesy particles for the examination; preparation of six to ten slides for each suspected specimen, and careful search of at least fifteen minutes per slide are the important points to remember.

No gross or microscopic characteristics of the tuberculous sputum have been brought out. Blood streaks, elastic fibers, and the like are suggestive but not pathognomonic of tuberculosis. In order to obtain positive results in apparently negative specimens from clinically positive cases, various methods of homogenization and concentration have been introduced.

By homogenization is meant the lowering of the viscosity, the specific gravity, and the solution of pus and other cellular elements and mucus. It is brought about by such means as fermentation, dissolution in alkali, and final prolonged shaking, which makes equal distribution of the bacilli and breaking up of their clumps. Con-

centration is obtained by the addition of the heavy hydrocarbons, such as chloroform, which sweep the bacilli down to the bottom upon centrifugalization.

Of these the so-called antiformin method has probably been most extensively tried in the average clinical laboratory. The experience has been uniformly disappointing in the hands of many laboratory workers, with the result that the method has now been practically entirely discarded. Such other methods of treating the sputum as autodigestion, aluminum hydroxide cream method, autoclave method, Phillip's fermentation method, Ellerman and Erlander method, Krauss and Fleming method, Greenfield and Anderson method, Pottenger method, and its modification by Andrus and MacMahon, all deserve due consideration from students of tuberculosis.

The results of an investigation carried on by Andrus and MacMahon with their improved technic would seem to furnish a convincing argument for the wisdom of employing one or several of the methods just enumerated, especially in cases where repeated negatives have been obtained in the clinically tuberculous.

Andrus and MacMahon report that by their method they were able to demonstrate tubercle bacilli in 61 (58 per cent) of 106 clinically tuberculous persons in whose sputum the organisms had never been demonstrated after repeated searches.

Dr. Lewis of the City and County Hospital reports that his experience with the Greenfield and Anderson method has been very gratifying.

Dr. Pottenger frankly states that in his practice the fresh smear is rarely employed. He employs one or several homogenization and concentration methods routinely.

Guinea-pig inoculation or culture method of Petroff as applied to the sputum is not generally practiced as a routine procedure.

Andrus and MacMahon demonstrated an 100 per cent agreement between their concentration method and guinea-pigs in 24 negative specimens and an 83 per cent agreement in 27 positive specimens, 19 of which gave positive guinea-pigs.

Couper found about 30 per cent positive cultures from known positive sputums. He claims a better result by means of the Na_2OH method than the antiformin.

In young children who invariably swallow sputum, we have resorted to making smears from the throat directly. In a few instances this has given a positive result.

We have also demonstrated the organisms in feces of infants with clinical signs of pulmonary

tuberculosis. In the absence of sputum or the negative throat smears this is the only avenue of demonstrating tubercle bacilli in infants.

The Pleural Fluid.—The majority of the pleural fluids designated as probably tuberculous are clear amber-colored. It has been thought that in the absence of a cardiorenal or some other systemic condition, any clear pleural fluid may be looked upon with suspicion as being tuberculous. These fluids, as a rule, contain very little sediment, easily coagulable, and of high albumin content. The predominating cells are lymphocytes. Few endothelial cells, large mononuclear cells and occasional polymorphonuclears are also encountered. On direct smears or by cultural methods no bacteria are demonstrable. Tubercle bacilli are practically never found. Guinea-pig inoculation results in negatives in over 50 per cent in our experiences. Occasionally, we encounter a thoracic fluid with various shades of cloudiness, which shows a high percentage of polymorphonuclear leukocytes but shows no pyogenic bacteria on direct smears of the sediment. Albumin contents are high. This type of fluid may often indicate a secondary tuberculosis of the pleura either by direct extension from far advanced pulmonary tuberculosis or a part of generalized miliary tuberculosis. It may occasionally indicate a very early stage of pleurisy with effusion in which no definite etiologic factor can be demonstrated, but which, as a rule, is diagnosed probably tuberculous by the clinician. In such a fluid a concentrated effort should always be made to demonstrate tubercle bacilli. A high percentage of positive results should be obtained on the direct smear, and guinea-pigs should invariably prove positive. Here, after cytologic and chemical examinations have been made, a simple concentration method may be employed to enhance the chances of positive results.

The Spinal Fluid.—In tuberculous meningitis the fluid may be perfectly clear or may present various shades of opalescence. On standing, a thin web-like veil or pellicle usually forms, extending from the surface of the fluid to the bottom of the tube. The presence of the pellicle, especially in a comparatively clear fluid, is always significant and should spur the laboratory worker to search for the bacilli with added diligence. When a pellicle is present, it should be incorporated in the smear. A clear fluid may wisely be treated with alcohol or aluminum hydroxide cream before centrifugalization for a sediment. A pointed 15 c.c. centrifuge tube is used. After centrifugalization at a moderately high speed for one-half hour every drop of the supernatant fluid

is poured off, and a thick smear is made of the sediment collected at the tip end. We have demonstrated tubercle bacilli in a fluid with a cell count of only 25. This may be considered an unusual accomplishment.

The cell count is definitely increased but not to such an extent as is the rule in a purulent meningitis. The common conception that the tuberculous spinal fluid shows a lymphocytosis has not been consistently sustained in our experience except in chronic cases which are rarely met here. In acute or subacute tuberculous meningitis it is not uncommon to find a definite neutrophilia in the spinal fluid, especially when the cell count is markedly increased.

A new method of examining the cerebrospinal fluid in cases of suspected tuberculous meningitis was recently advanced by Kasahara, who produced a focal reaction by the injection of tuberculin in the spinal canal. This injection rendered a striking increase of cells, many of which were polymorphonuclears with the constant appearance of a large number of red cells. The control cases showed no such reaction.

The Urine.—In renal or vesical tuberculosis a demonstration of tubercle bacilli is not as difficult as has been supposed, except in very early cases. Where a reasonable amount of suppuration is present the bacilli are invariably found, the matter of a positive or a negative report resolving itself into the patience and care of the examiner. Time and again we have found tubercle bacilli in a smear which had previously been discarded as negative by a less experienced technician. The homogenization and concentration of the urine by an appropriate means may hasten, as well as increase, the chances of demonstrating the bacilli. The discovery of the organisms in the urine of cases of acute miliary tuberculosis or far advanced pulmonary tuberculosis without the actual renal involvement has been reported. The final positive report must always be made on a catheterized specimen. Hematuria and pyuria are the rule in genito-urinary tuberculosis, while there are no pathognomonic urinary changes in tuberculosis elsewhere.

The Blood.—A positive blood culture has been obtained repeatedly in acute miliary tuberculosis or in the late stage of advanced pulmonary tuberculosis. The results, however, have not been so encouraging as to make it a routine procedure in a general laboratory. Libman obtained positive results in 56 of 141 cases by making the culture about twenty-four hours following the injection of tuberculin.

It can be safely stated that there are no specific

blood findings in any form of tuberculosis. The blood changes, if any, seem to be due to the active or extensive tissue destruction, the secondary metabolic or toxic changes brought about by the tuberculous process or by the secondary infection.

As early as 1893 von Noovden showed that in pulmonary tuberculosis the number of red blood cells and the amount of hemoglobin rarely decreased more than 20 per cent except when there are complications, such as hemorrhages, suppurative or amyloid degeneration. This view seems to prevail still at the present time.

Leukocytosis occurs in secondary infection and also where there are extensive lesions with marked destruction of the parenchyma. It is observed, however, that the leukocytosis is far from being parallel with the intensity of the fever. A high polymorphonuclear percentage with a disappearance or diminution of eosinophiles appears to be the rule in leukocytosis. A relative or absolute lymphocytosis with a slight eosinophilia is a usual finding in an incipient or early stage of tuberculosis and also frequently in uncomplicated acute miliary tuberculosis. It can be safely stated that tuberculosis in itself does not seem to stimulate a neutrophilic increase but rather a lymphocytosis.

Blood Chemistry.—No definite conclusion of diagnostic or prognostic value has been arrived at by various investigators concerning the chemistry of the blood in tuberculosis. According to Sweeney and his co-workers, cholesterol is definitely decreased in proportion to the severity of the process and is of prognostic value. It rises in proportion to the improvement and also in proportion to lung destruction. Variation in value of other blood metabolites would seem to be more dependent upon some other concurrent condition than tuberculosis itself.

The Feces.—Tubercle bacilli should always be sought in the feces of the cases of suspected intestinal tuberculosis with active symptoms and in younger children with active pulmonary tuberculosis. Blood-stained or purulent mucus or material is selected for staining. Sediment from watery or purulent stools may well be digested and concentrated before examination. Salts and not oils may be administered before such an examination.

Tissue.—A gross appearance is usually typical. Tubercles, as a rule, are demonstrable to the naked eye. They present a yellowish or white nodule and when sufficiently large show cheesy degeneration or central necrosis. An early tu-

berculous tissue cannot be distinguished from any other granulation tissue grossly. The usual procedure is to prepare a histologic section of a suspicious area and look for the well-known characteristic microscopic picture. The tissue may be stained for tubercle bacilli. If the process be early or acute the organisms can be demonstrated in the section. This makes the diagnosis absolute. The next step is the maceration of the suspected tissue for the inoculation into guinea-pigs.

Tuberculous Pus and Discharge.—While, as a rule, the examination of tuberculous pus on direct smears is considered unsatisfactory it should never be neglected. If the process is new or acute the demonstration of the bacilli on direct smears is usually possible. We have demonstrated the acid-fast bacilli in the caseous material from a tubercle on the peritoneum. We have repeatedly obtained a positive result from the fresh discharging pus of the cervical glands. When the pus is old and degenerated, such as that from psoas abscess, it may be practically impossible to discover the organisms.

Culture and Animal Inoculation.—With reference to this very important phase of laboratory diagnosis of tuberculosis, H. J. Couper, of Denver, may be properly quoted.

For the isolation of tubercle bacilli from tissues and contaminated material, such as sputum, he prefers the Petroff's Na_2OH method. He obtained about 30 per cent yield on the primary cultures from microscopically positive sputums.

For the guinea-pig inoculation he prefers the subcutaneous method to the intracutaneous on account of the greater danger of ulceration and external contamination in the latter and to the intravenous, intracardiac, intrahepatic, and intraperitoneal methods in which the disease does not develop earlier than the former. Concerning the experiences with extragenous agents, such as the Roentgen ray, benzene, and with the crushing of the regional glands in order to hasten the development of tuberculosis in the pig, the author has had no success in obtaining earlier diagnostic information by these means.

The serologic aspect of the laboratory diagnosis of tuberculosis has been purposely omitted in this communication.

CONCLUSION

An attempt has been made to enumerate and discuss some of the more important laboratory procedures in the diagnosis of tuberculosis.

The primary objective of the tuberculosis laboratory is the demonstration of tubercle bacilli, which makes the diagnosis absolute. Collabo-

rating laboratory evidences are of value in conjunction with clinical findings.

The clinical laboratory of the tuberculosis sana-

torium must be fully equipped to obtain that objective which means the maximum service to the patient.

ANAPHYLACTIC REACTION FOLLOWING ANTISTREPTOCOCCIC SERUM

By V. L. SIMAN, M.D.

WINSHIP, NEBRASKA

Dorland's definition of anaphylaxis is "The state of excessive susceptibility to the action of a toxin or a drug which sometimes follows infection or continued administration of the drug. (Called also Theobald Smith phenomenon and hypersusceptibility)."

There are three prevailing theories as to the manner in which anaphylactic shock is produced. Prominent among these is the "flocculation theory." Thus Kopaczewski (Paris Med., November 12, 1921) holds that there is (1) true anaphylaxis, a cell shock following the second injection; (2) a humoral shock, due to sudden flocculation in the blood from breaking up of the blood cells, that is, hemoclasia; (3) a thromboplastic shock, in which the blood cells form coagula and thrombi. All these are physical phenomena affecting the colloidal balance of the blood which in turn provoke the symptoms observed.

Mr. A. C. Married, aged 37 years, German American, electrician, received a slight abrasion on the index finger of the right hand. On the third day following the injury he came to the office for treatment. Physical examination found a well-developed robust individual; weight, 165 pounds; five feet nine inches tall; temperature, 100.2°; pulse, 90; blood pressure, 122-80; eyes, ears, nose, and throat, negative except for slightly enlarged tonsils; chest and heart, negative; nervous and osseous system, negative; skin, negative, except for the red line that we often see in pyogenic infection of lymphatic glands extending from the abrasion of the index finger to the enlarged glands of the axilla; abdomen, genitalia, and urine were all negative.

Past history: usual diseases of childhood with no other sickness until 1917, when he had a suspicious throat, and 5,000 units of diphtheria antitoxin were given. Since that time he has enjoyed good health.

From the presence of the red streak extending up the arm, with an increased pulse rate and temperature, with a history of an abrasion, we were dealing undoubtedly with a beginning septicemia.

The patient was put to bed, and 10 c.c. of

antistreptococcic serum was given intramuscularly, the abrasion opened, drainage established, and a large dressing applied extending to the axilla, and was kept saturated with a solution of alcohol, water, and boric acid. Immediately after the serum was given the patient complained of great pruritus followed by a skin rash of an urticarial or erythematous character, swelling of the lips, and puffiness of the eyelids, difficult respiration with severe precordial pain of the pressure type, severe diarrhea and vomiting with a stiffness of the joints. The condition persisted for eight hours. Bicarbonate of soda was given orally in liberal quantities.

The patient made an uneventful recovery until the seventh day when the symptoms and rash above mentioned appeared in an exaggerated form. This time there was also great prostration, slight yellow tinging of the skin with puffiness of the hands. The pulse became very rapid (140), weak and irregular, heart sounds feeble, with considerable cyanosis and a slight edema of the lungs. Hands and feet were cold and more or less clammy, also some adenopathy of the cervical glands. Heat was applied to extremities, and 15 minims (1-1,000) adrenalin solution was given hypodermatically. Strychnine, 1/30 hypodermatically, every three hours. Hypodermoclysis of n/10 NaCl solution with a bicarbonate of soda solution, 4 oz., injected high in the bowel every four hours. Calcium lactate, 15 grains, every two hours. The patient started to rally after two hours. The hypodermoclysis was discontinued, but the strychnine, soda bicarbonate solution, and calcium lactate were continued. Ten hours after the reaction the pulse became regular, weak, and very slow, reaching 52 per minute, but gradually coming up to 78 on the third day, when a third reaction took place, but in a very mild form. There was the rash with the puffiness of the lips and hands. This reaction lasted for twenty-four hours and gradually receded.

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"GOOD NEWS SUPPRESSED"

The above quotation was gleaned from an editorial in the *Saturday Evening Post* for January 30, 1926, and is full of many good things, as well as slurring over many of the things done by the medical profession and giving them scant praise where much praise is due. The first criticism the *Post* has to offer is "the science of medicine, whether because of or in spite of its abundant store of Greek and Latin jawbreakers, is, as far as the laymen are concerned the most tongue-tied of all the learned professions." This is very true, and to listen to the average doctor reading a paper before a medical society, even, some of his hearers are nonplussed as to what he actually means.

It is further suggested in the criticism that doctors use too big words and fail to clear up situations which might be understood by the lay people. They say but little, leave their patients in doubt, perhaps impressed with ponderosity, but not always won over; that all of our physicians, surgeons, and health officers are full of important information which they are anxious to get before the public, but for the lack of simple English in which to get it over, the whole thing falls flat. However, it is announced that a book is to be published on psychiatry and in such simple language that anyone can understand. Now, if the psychiatrist can put a thing like this over why can't the doctors, surgeons, and public-health

men do the same thing, as they have a much simpler text to work from?

The *Post* goes so far as to say that because of the inaccessibility of large bodies of readers, to get an accurate statement in plain and readable form is costing thousands on thousands of American lives each year. With this we must take issue. It seems hardly possible to deny that in this day and age, unless it be in the East where they are still more or less hidebound, the doctor and patient really get along well together; and the physician of to-day, if he has had any experience, is very apt to explain things very definitely and orderly, so that the patient, or the family of the patient, may understand what he is dealing with. But in some parts of the country, perhaps, where the East, especially, has not learned the broad-minded prairie scope of the Middlewest, they may have a good deal of difficulty. It has been confessed that men from the East who come to the Middlewest to attend brilliant medical society clinics, say, like the clinical meetings of the General Interstate Graduate Assembly, are amazed at the ease with which our clinical material is used and demonstrated. The fact that these associations work from early in the morning until late at night is something that the average New Yorker would abhor were he not caught by the enthusiasm and interest of his co-workers and his enthusiastic audience.

When the man who wrote the editorial in the *Post* tells us that medicine and surgery of to-day are a tragedy he is not altogether careful about his choice of words or he may fall under the same fault that he deplores in the doctor, that is, a lack of plain speaking. And when he suggests that the economic toll exacted by needless death and disability runs into billions of dollars he certainly is overstepping his mark. We would like to suggest that Dr. Peck invite this man to be present at one of the thrilling meetings to be held next fall in Cleveland, Ohio; it would change his mind greatly. It is quite true that the commonplace things are much neglected, but they are neglected by the people, not by the physicians or surgeons who investigate coughs, look at eyes, ears, noses, throats, and teeth, for they cannot possibly prevent the neglect of the patient when he simply refuses his opportunities. True, there is some justification in the fact that a good many things are overlooked and a good many doctors are slipshod, in saying that tumors of all kinds, including adenoids, will continue to grow because the doctor simply says, "Never mind, they will disappear."

Our critic also speaks of indigestion, for the

most part avoidable, as having become our national disease. I wonder if he knows anything about the subject at all. He says we brutalize our hearts, kidneys, lungs, and nervous system, which is probably true. Perhaps we do, but we do it perforce sometimes because we must and we can't regulate our own lives or our own environment sufficiently well to take time to attend to what may be coming to us. In this the public is greatly aided in its neglectful manner by the various cults of all kinds, including the Christian Scientists and Chiropractors and all the midway things between the two extremes. Attention is drawn, too, toward the lack of periodical medical examinations. That is a matter which has been taken up by the profession for the last few years, and it is safe to assume that more people have periodic examinations now than ever before.

A fling is taken at the handicap of the medical profession in their attitude toward the lay press. That is being gradually corrected, though not in New York, but in Minnesota. In most of our societies and even in our adjoining state societies we have publicity committees which give much information to the newspapers, which have kindly reciprocated in publishing what may be either unintentional errors or errors of misunderstanding. The American Medical Association, of course, has tried in every way to act as a publicity instrument for the benefit of the people all over the United States, and if one picks up a *Journal of the American Medical Association* or reads the innumerable books published by the Association for the benefit of the people it will be seen that this criticism has no point. It is barely possible, too, that the newspapers are not willing to print as much as the medical profession is able to offer because of their varied readers and their hesitancy in boosting medical men and thereby injuring the sensitive feelings of the cultists. It has been demonstrated time and again that the medical profession are devoting more time to the elimination and cure of disease, both for and without pay, than ever before. And if one consults with physicians in various parts of the country one finds that the usual complaint is that their incomes have receded rather than increased.

It is well for the *Post* to take this matter up, but it ought to give all the facts and not criticize the medical profession too freely.

APROPOS TO THE WEATHER

In reading one of Ossendowski's books, entitled "From President to Prison," the writer came across one or two things that were interesting,

at least for the present, and incidentally he learned some important, if perhaps colorful, truths.

Ossendowski wrote "Beasts, Men and Gods," "Man and Mystery in Asia," and other books that were filled with adventure and information, and brought one into closer contact with his travels in the far East. He was a chemist and at one time taught in the University of Medicine in St. Petersburg, but as he was a Pole he found it advisable to get out of Russia about the time of the war and in writing his first book he showed how he traveled through eastern Russia, Siberia, Manchuria, Mongolia, and China.

In this present book, "From President to Prison," he was sent to Vladivostok and from there on to Harbin. During his investigations he got into more or less perilous places and incidentally suffered a severe injury to his leg and ankle so that he was carried to a hospital in Harbin and left to think it over. But he was a man who was difficult to keep down, and before his leg had properly healed he was up and out again, and could not be detained by his surgeon who said he really needed a brain specialist more than he needed a leg surgeon. However, what he recorded in connection with this injury to his leg was what many of our old people who are supposed to have rheumatism have frequently said, that they could forecast and foretell changes in the weather by the various pains, aches, and uneasy feelings in their rheumatic joints. He said he could tell the difference between a rain in progress, a windstorm, or something worse, and that he became quite a living barometer, equal in many ways to our old and time-tried friends who served in the Civil War. They can tell you what is going to happen as well as Ayer's Almanac and sometimes even better than the weather bureau men or meteorologists who are paid handsome salaries for predicting our snows and blows and rain storms.

Finally, Ossendowski was arrested and sentenced to prison for eighteen months, and in that period of time he tells of a good many of his experiences. Although he was more or less a respected prisoner and allowed more liberties than the criminal classes, as he was in a political prison, he had many things to write about. He told much of the horrors of prison life and eventually succeeded in interesting the high officials in the western capital of Russia in the need of a change, that prison treatment must undergo a definite reformation. What he suffered was something very tangible. He recites that in his cell he occasionally had companions;

of course he had the usual companionship of a common insect that inhabits unclean places. But once, to his joy, he found in the garden of the enclosure of his prison an injured bird that he took to his cell and bandaged its broken wing, eventually giving it liberty. This bird seemed to realize and recognize the attitude of the man himself, and was able in some way to appreciate his moods. Sometimes when the man was feeling well and as happy as one could be in prison this bird would fly about and make all sorts of overtures to him, so that it seemed to understand and was quite playful. But when he was sad or dull the bird would sit silently, motionless, on the window-sill, looking at him, and then instantly respond to an invitation which had the usual pet behind it. He afterwards entertained a mother rat and her brood, so that they became quite familiar with him, accepted food from his hand and eventually, as the bird, would begin to understand his moods and would run away at the slightest attempt on Ossendowski's part to make any demonstrations; but when he was feeling well and when the rats were undisturbed they took full possession of his cell and did almost anything they chose, until they grew large enough to disappear in the outer world.

His third visitor was a large spider, and his story of her abiding place seems rather colored. But she illustrated a few cardinal points. She immediately began to construct a web in the corner of the window, but as the window was covered with gauze in order to allow no flies to enter he was obliged to catch her food for her. He thought she was an extraordinary creature, and he could tell by her conduct one or two days in advance whether there was to be fair weather, storm, or rain, indicated by his spider barometer in the middle of her web! Before a coming storm the spider held tightly to the web, with all its feet, and even bound itself to it with extra threads. Before rain it rolled itself into a ball in one corner of the web and gathered all its legs up underneath its body while when dry, hot weather was approaching it spread its legs as widely as it could, holding on with only two or even at times with only one of them. He said he used to wonder whether the spider had rheumatism or had suffered from an accident as he had, and was, as he was, very sensitive to all changes in the weather. Yet this spider apparently knew the mental attitude of the man, recognizing his gloom and apprehension by keeping in her own part of the house; and when he was gay and joyous or ready for anything the spider would come down and associate with him.

There is nothing especially mysterious about these things except they all go to show that sometimes individuals, as well as animals, and probably animals more so, are extremely susceptible to barometric changes. And if this be true, why should anyone laugh when the sick man, whether he has rheumatism or thinks he has, whether he has bad teeth or tonsils, is extremely sensitive to changes in the weather. Anyway, it is an interesting subject and the book is extraordinarily interesting from various angles.

MISCELLANY

STATE HEALTH DEPARTMENT OF MINNESOTA TO SUPPLY TOXIN-ANTITOXIN AND MATERIAL FOR THE SCHICK TEST FREE OF CHARGE

The Minnesota State Sanitary Conference requested the State Health Department to secure toxin-antitoxin and material for the Schick test for free distribution throughout the state in the line of the distribution of diphtheria antitoxin.

The statistics for the past seven years show that no further reduction of diphtheria cases and deaths may be expected until toxin-antitoxin is generally used.

MINNESOTA'S DIPHTHERIA 1918-24 (7 years) 28,852 cases—1,667 deaths—fatality rate 5.77

	Cases	% of all Cases	Deaths	% of all Deaths	Case Fatality Rate
Under 1 yr.	355	1.23%	53	3.1 %	14.91%
*Under 5 yrs.	4220	14.63%	610	36.63%	14.45%
5-9 yrs.	8210	28.46%	511	30.69%	6.22%
10-14 yrs.	5489	19.02%	215	12.91%	3.91%
15-19 yrs.	2649	9.18%	87	5.23%	3.28%
All others	8284	28.71%	244	14.54%	2.94%

*Includes group "Under 1 yr."

Year	Cases	Deaths	Fatality Rate	Mortality Rate per 100,000
1918	3674	282	7.7	12.3
1919	4541	302	6.6	12.9
1920	3616	243	6.7	10.3
1921	4380	220	5.0	9.03
1922	4270	192	4.5	7.74
1923	4430	210	4.7	8.40
1924	3941	218	5.8	8.61

The Department of Administration and Finance is now making arrangements for supplying toxin-antitoxin and material for the Schick test, material to be distributed free of charge by the State Health Department.

Dr H. M. Johnson, President of the State Medical Association, had the whole proposition thoroughly discussed by the proper committees of the Association who enthusiastically indorsed the State Board's program. In counties where no organized campaigns for toxin-antitoxin work have been started, the matter will be taken up with the county and district medical societies by the State Board of Health. The secretaries of the county and district societies will receive a letter shortly giving the

complete outline of the program discussed with Dr. Johnson.

The Board feels that the supply of toxin-antitoxin should be made available not only to health departments and school boards who will conduct organized work in the schools, including of course children under school age, but also to physicians for use in their private practice. It is obvious that the family physician is in a position to reach the very young children who have the greatest susceptibility to diphtheria. The fact that during the past seven years nearly 37 per cent of all the deaths from diphtheria have occurred in children under 5 years of age emphasizes the part the family physician will play in the eradication of diphtheria through toxin-antitoxin immunization.

NEWS ITEMS

Dr. Albert F. Graves has moved from Brainerd, Minn., to Daytona, Florida.

Dr. J. B. Gumper has moved from Breckenridge, Minn., to Belfield, N. D.

Dr. Roy Andrews, of Mankato, is doing postgraduate work in New Orleans.

Dr. R. P. Heim, of St. Paul, will leave next week for Vienna for postgraduate work.

Notice of the death of Dr. John W. Freeman, of Lead, S. D., appears below in another column.

The number of physicians in North Dakota has fallen nineteen below the number in the state in 1918.

Dr. F. M. Munson, formerly in the medical service of the U. S. Navy, has been appointed health officer of Sioux Falls, S. D.

Dr. James A. Thabes, of Brainerd, has been reappointed a member of the Minnesota State Board of Health by the Governor.

Dr. Abraham Shedlov has moved from Gully to Fosston and become associated with Dr. Robert Turnbull, of the latter place.

Dr. J. K. Kutnewsey, of Redfield, S. D., was elected president of the Aberdeen (S. D.) District Medical Society for 1926, last month.

The various clubs of Valley City, N. D., listened to a plan last month for an up-to-date hospital to cost over \$150,000 for that city.

Dr. L. G. Ericksen, a recent graduate (class of '24) of the University of Minnesota, has taken over the practice of Dr. E. J. Bratrude, of Sacred Heart.

The Sioux Valley Eye and Ear Academy held its annual meeting last month as a joint meeting with the Kansas City Eye, Ear, Nose, and Throat Society at Omaha.

Dr. J. T. Schlesselman, of the Mankato Clinic, Mankato, is spending three months abroad, doing postgraduate work in eye, ear, nose, and throat diseases in Vienna.

The Maternity Hospital of Minneapolis held its thirty-ninth anniversary last month. It is doing a great and noble work as a charitable and pay maternity hospital.

Dr. Henry A. Owenson, of Grace City, N. D., is in Los Angeles, Calif., doing postgraduate and special work in the University of California. He will be absent until June 1.

Miss Elizabeth Hanson has resigned as county nurse of Itasca County and will take a postgraduate course of three and a half years in public health nursing at Columbia University.

Dr. A. J. Chesley, Executive Officer of the Minnesota State Board of Health, favors a tourist camp fee in Minnesota, the funds so received to be used to give all tourist camps proper sanitary care by the State.

Mrs. Dr. E. S. Strout, of Minneapolis, was elected president of the Hennepin County Medical Society Auxiliary last month. The activities of the Auxiliary last year were spent in aiding the patients at Glen Lake Sanatorium.

A seventeen-weeks course in public and personal health for teachers was opened in Minneapolis on February 6 by the Hennepin County Tuberculosis Association and the Extension Division of the University of Minnesota.

Dr. Charles G. Cummings, a recluse physician of St. Paul, died last month. Dr. Cummings graduated from the College of Medicine of the University of Illinois in 1885, and at once began practice in Minnesota in White Bear and St. Paul.

At the annual meeting of the Western Montana Medical Society, held last month at Missoula, the following officers were elected: President, Dr. R. L. Owens, Missoula; vice-president, Dr. T. A. Fitzgerald, Missoula; secretary-treasurer, Dr. L. E. Henderson, Missoula.

The Stutsman County Medical Society of North Dakota met in Jamestown last month when papers were presented by Dr. S. A. Zimmerman, of Valley City, and Dr. G. H. Holt, of Jamestown, and case-reports were given by Dr. Helen K. Wink and others.

The Clinical Society of Genito-Urinary Surgeons held its annual meeting at the Mayo Clinic, Rochester, Minn., last month. A two-day session

was filled with clinics in the various hospitals of Rochester and the visitors were royally entertained by different members of the Mayo staff.

Dr. E. P. Lyon, Dean of the Medical School of the University of Minnesota, has announced that the failure of Minneapolis in building a new city hospital on the University Campus will not be allowed to stand in the way of the original plan of increasing the capacity of the University Hospital to 600 beds.

Dr. Ira A. Leighton, an old-time physician of Boulder, Mont., died on February 2, at the age of 68. Dr. Leighton graduated from Michigan in the class of '85, and for thirty years was the physician for the State School for the Blind at Boulder. He was prominent in politics, and was highly respected in the entire state.

Dr. Harriet L. McCool died in Minneapolis last month at the age of 83. Dr. McCool took a regular course in medicine in the University of Michigan, but finished her course in Chicago and took her degree in Homeopathy there. She then practiced ten years in Muskegon, Mich., before coming to Minneapolis in 1877.

At the annual meeting of the Black Hills (S. D.) District Medical Society, held last month, the following officers were elected: President, Dr. Lyle Hare, Spearfish; vice-president, Dr. J. A. Crouch, Belle Fourche; secretary-treasurer, Dr. J. L. Stewart, Lead; delegates,—Drs. N. T. Owen and W. E. Morse, Rapid City; censors,—Drs. A. S. Jackson (Lead), J. L. Chassell (Belle Fourche), and W. E. Morse (Rapid City).

At the annual meeting of the Fourth District (S. D.) Medical Society, held at Pierre in January and at which Dr. H. L. Crane, of Peru, South America, spoke, as noted in our last issue, the following officers were elected: President, Dr. R. J. Morrissey, Pierre; vice-president, Dr. E. T. Stout, Pierre; secretary-treasurer, Dr. H. B. Martin, Harrold; delegate, Dr. A. A. McLaurin, Pierre; censor, Dr. F. A. Northrup, Pierre.

The Sioux Valley Medical Association held its midwinter meeting in Sioux City, Ia., last month. Every speaker on the program was present, and the meeting was a success from every standpoint. The morning clinics contained an abundance of diversified material, which enabled the speakers to bring out many points of medical and surgical interest. The dues of the Association are to be increased from two to five dollars, and thereafter enable the Association to pay the expense of invited speakers and to give a stenographic report

of the transactions for publication in THE JOURNAL-LANCET. Drs. Berglund and Hamilton, of Minneapolis, and Giffin, of Rochester, were the Minnesota invited guests who gave addresses at the meeting.

DEATH OF DR. JOHN W. FREEMAN

I wish to inform you that Dr. John W. Freeman, of Lead, S. D., died on February 2, at the age of 73.

Dr. Freeman was a graduate of the University of New York, in the class of 1879, and had practiced in Dakota Territory and South Dakota since 1883. He was a member of the American Medical Association, of the South Dakota State Medical Board, of the American College of Surgeons, and of the American Railway Surgeons. He was a past-president of both the Black Hills Medical Society and the South Dakota State Medical Association. He was a member of the first Board of Medical Examiners of the State of South Dakota, continuing on that Board for a number of years. He was again elected to the State Board of Health several years ago and was president of that Board at the time of his death.

Dr. Freeman was connected with the Homestake Mining Company for the past thirty-five years, fifteen years of which he was chief surgeon.

He was one of the best known medical men in South Dakota, and no one stood higher in the profession in the state. Dr. Freeman retired from active practice in 1918 and spent his declining years in Lead.

—F. E. CLOUGH, M. D.

Technician Desires Position

In Twin Cities. Experienced, and can give best of references. Address 111, care of this office.

Laboratory and X-Ray Technician Wanted

A woman preferred. Position with a Clinic in a small city in Minnesota. Address 107, care of this office.

Alpine Sun Lamp for Sale

Just like a new lamp. Used only a few hours as a demonstrator. Direct current. Will sell cheap. Address 110, care of this office.

Wanted

Assistantship or location by well-qualified eye, ear, nose and throat man, good refractionist and operator. Married. Shriner. Excellent references. Address 101, care of this office.

X-Ray Apparatus for Sale

A "Snook" X-Ray apparatus for 220 volts, direct current, is offered for sale at a very reasonable price. Address 121, care of this office.

Fine Location for a Physician in Minneapolis

Office for rent in one of the best locations in the city in South Minneapolis with dentist. For particulars communicate with M. T. Lundblad, 1523 East Lake Street. Telephone Dykewater 1243.

Laboratory Technician Wants Position

A graduate nurse with four years experience in all routine chemical laboratory work; also do x-ray, physiotherapy, diathermy, quartz, ultraviolet ray; sinusoidal and basal metabolism treatments. Address 112, care of this office.

For Sale

A Wappler E-Xell diathermy and large rotary converter, used four months. Reason for selling, formed partnership duplicating this machine. Can buy one or both. Address 109, care of this office.

Assistant Wanted

At once. Must be graduate of Class A school. Good hospital connections in a good town in North Dakota. Good opening for right man. Partnership later. Nothing to buy. Address 116, care of this office.

Practice for Sale

A general practice in a town of 800 in North Central Minnesota. Invoice of equipment, \$400.00, which includes x-ray apparatus. One can make money from the start. Possession at once. Terms if wanted. Adress 108, care of this office.

Practice and Hospital Equipment for Sale

Having decided to move to a university city, I offer my \$20,000 practice and hospital equipment for sale or exchange for real estate. It requires a physician who can do his own surgery to handle the practice. Address 117, care of this office.

Offer to Share Office in Minneapolis

A dentist desires a physician to share his office in South Minneapolis. Best corner on Lake Street. New building. The dentist has been in same location for seven years. Would like a physician of same length of experience. Address 122, care of this office.

Locum Tenens Wanted

Recent graduate, and Norwegian or German preferred, to relieve one of a partnership for two months or more. Permanent connection as third man in partnership possible. Hospital facilities. Small Minnesota town. Address 114, care of this office.

Position Wanted as Technician

By young woman who is a graduate of the School of Physiotherapy of Seattle. Three years of study and clinical experience at School Clinic. Can do urinalysis, diathermy, sine wave, deep therapy, actinic ray, galvanism, medical gymnastic and massage, and hydrotherapy. Address 104, care of this office.

Practice for Sale

\$500 buys unopposed \$6,000 cash practice in a Minnesota town of 800 with large unopposed territory. Equipment included. Joining group. Address 118, care of this office.

Anesthetist in Minneapolis Hospital Wanted

An anesthetist experienced in the administration of ether and gas-oxygen for obstetrical work and as assistant anesthetist in operating room. Address 119, care of this office.

Wanted at Once

Full time Eye, Ear, Nose and Throat specialist in well established clinic at Jamestown, N. D. Permanent location requiring no investment. Salary \$4,000 and up commensurate with ability. Personal investigation invited. Address W. C. Nolte, M.D., Jamestown, N. D.

Position in Physician's Office Wanted

By a young woman who can do office work thoroughly—stenography, dictaphone work, book-keeping, etc. Has had two years and a half in a physician's office and three years in a bank. Capable as secretary or all-round office work. Lives at home and will accept moderate salary. Best of references. Address 120, care of this office.

Physician Wanted in Minnesota Village

The village of Gully, Minn., and vicinity wish to advise that after February 1, 1926, they will be interested in securing the location here of a doctor, as the man practicing here now is leaving after that date.

The opening here is an exceptionally good one, and the location has already proven itself from an earning standpoint which can be substantiated by the former doctor.

Gully is located in the eastern part of Polk County, Minn., is a small village with a large and prosperous farming territory surrounding it. It is located in the midst of one of the best dairying sections in the state.

The location gives the doctor who locates here a territory on three sides of its village of twenty miles north, west, and south and nine miles east to its nearest town where another doctor is located. Address Drawer B., Gully, Minn.

PHYSICIANS LICENSED TO PRACTICE IN NORTH DAKOTA AT THE JANUARY, 1926 EXAMINATION

BY EXAMINATION		
Name	College of Graduation	Address
Robert B. Radl.....	U. of Minnesota, 1925.....	Hebron, N. D.
McLeod Gillies.....	U. of Manitoba, 1924.....	Grenora, N. D.
Willard A. Wright.....	U. of Manitoba, 1924.....	Westby, Mont.
Clarence E. Robbins.....	Harvard Med. School, 1923.....	Fargo, N. D.
Joseph Sorkness.....	U. of Minnesota, 1924.....	Hankinson, N. D.
Edgar A. Rygh.....	Rush Medical, 1925.....	Fargo, N. D.
Charles J. Meredith.....	U. of Manitoba, 1921.....	Marion, N. D.
Roy C. McCartney.....	U. of Manitoba, 1925.....	Donnybrook, N. D.
BY RECIPROCITY		
Charles P. Frisch.....	U. of Minnesota, 1914.....	Bismarck, N. D., Recip'c'y with Minn.
H. Milton Berg.....	U. of Minnesota, 1924.....	Fargo, N. D., Reciprocity with Minn.
Arthur J. Button.....	U. of Minnesota, 1906.....	Hackensack, Minn., Recip. with Minn.

NATIONAL BOARD CREDENTIALS		
Tracy W. Buckingham.....	Rush Medical, 1922.....	New England, N. D.
Fifteen applied for license; three were refused.		—G. M. WILLIAMSON, M.D. Secretary.

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PHYSIOTHERAPEUTICS: PAST AND PRESENT*

BY OTTO F. SCHUSSLER, M.D.

Sivertsen Clinic

MINNEAPOLIS, MINNESOTA

Physiotherapy, as the name implies, signifies the use of physical remedies in the treatment of disease and disability. These physical remedies as employed to-day include such agencies as heat, cold, counterirritation, massage, active and passive movement, mechanotherapy, baths of all kinds, light, both natural and artificial, electricity in its various manifestations, splints and braces in correcting deformity, in fact everything in the way of therapy excepting drugs (including within the meaning of this term, of course, the so-called biological preparations), surgery, and psychotherapy, and with respect to the latter it may as well be stated at the outset that physiotherapy can no more be divorced from psychotherapy than can surgery or drug treatment.

Physiotherapy is certainly not a new branch of medical science. It is in fact the oldest and, in one form or another, the most commonly employed variety of therapy. Not only were many of the physical measures mentioned, utilized by primitive man in the treatment of disease and injury at a very remote period of human history, but their use among the lower animals seems to be instinctive. Who of us, for example, has not watched with interest his own dog, quietly and as a matter of course, apply the most skillful massage to a lacerated paw with a marvelously flexible and adaptable tongue, or who has failed to be impressed with the old fellow's manifest

knowledge of the value of heliotherapy as shown by his seeking out, in the early Spring, some sheltered nook on the south side of the house, where with eyes half closed and a full front exposed to the vernal sun he will sit on his tail and soak up ultramodest violet rays by the hour in the expectation, I believe, of restoring free movement to parts which have lost, temporarily, their flexibility. Instinct, it is agreed, prompts the performance of these acts, though carried out with the air of one who has wisely cogitated, and instinct too, we presume, may be credited with the hunch which induces the old rascal, when suffering from a misery in his tummy, to endeavor to swallow a quantity of unchewed grass, a material which by its physical action alone makes the immediate unloading of the tortured viscus a certainty.

How have we all been startled and thrilled at the behavior of the diminutive household canary, that, silent and depressed through a long spell of dull, cloudy weather, does again, when a shaft of sunlight falls athwart his cage, open wide his beak and let his illumined being o'er-run with a deluge of delirious melody that floods the whole house. "He that hath ears to hear let him hear!" Surely this energy so miraculously transformed into music is sun born!

What picture of scenes enacted down on the farm in boyhood is more tenacious in our memories still than that furnished by the tired old plow horse who, when his harness had been pulled off

*Presented before the Hennepin County Medical Society, Minneapolis, Minn., September 14, 1925.

at the close of a long hot day in the cornfield, would give his hide a comforting shake, walk feebly with lowered and extended head over to a soft spot in the barn-yard, turn around falteringly, this way and that, a time or two and then, with shaking knees bending under him, slowly sink to earth with abysmal sighs and puffs of relief? Thereupon would begin an heroic and oft-repeated effort, punctuated by hair-raising grunts and groans, to roll clear over. This stupendous endeavor, though commonly failing of its intended object, did serve to stretch and massage every fiber in the old fellow's fatigued and stiffened body till, Presto! in response to the stimulating and rejuvenating effect of this physiotherapeutic measure, new life surged through him; then how with a hist upward and a lunge forward he would regain his feet and head down and tail a-risin, cavort and caper and let fly his heels at the big, round moon with an overflowing reckless abandon that threatened his cadaverous old frame with complete disarticulation, and just when such disaster seemed inevitable and instant he would bring up short with a blast from dilated nostrils which electrified the farm boy and sent the panic-stricken barnyard fowl scurrying to cover. "Verily, herein is a sign unto people who have understanding and a symbol unto those who consider!"

Have you forgotten how the long-gear'd, loose-jointed, addle-pated Shanghai rooster, after coming off second best in an argument with his lighter but more active and pugnacious Leghorn rival, would sneak cautiously out from behind the corn-crib, a sorry, dejected, woe-begone wreck; and with furtive, shamefaced sidewise glances out of half-blinded eyes, hitch himself stealthily over to a heap of dust at the garden's edge, settle carefully into it and, with feathers ruffled and wings outspread, chuckle and chortle and gurgle and croak while, with many a flirt and flutter he worked the fine particles of Mother Earth, surcharged with heat and energy from the noon-day sun, into his very skin? Then how with a bound he would leap to his feet, shake his feathers into position, throw back his battle scarred head and hurl his lusty challenge at the feathered world? "Verily, herein is a sign unto people who harken."

Is there among us one so unfortunate as never to have been permitted, when a boy, to observe the old brood sow, many, many times a mother, as she ministered to the gastronomic requirements of her ten or a dozen insatiable, curly tailed porcine imps of blackness? Can you not see her yet as she lay outstretched in the heat and glare

of the burning July sun, atrociously bitten and punched and pulled at, pestered by flies, and stung by ants till outraged nature could endure it no longer? And do you not recall how, with a short, sharp squeal of exasperation and a vicious kick of emancipation, she would sweep the tormenting horde from her depleted dugs and then with swaying and aching head stagger slowly over to the mudhole in the shade of the watering trough, muttering dire imprecations the while on the penalties of motherhood, to indulge in the cool luxury of that soothing, soporific, soul-satisfying souse whose renown has served to keep the sleepy town of Jordan on the map ever since her famous brewery was Volsteded out of existence? "Nature with cheap means still works her wonders rare!"

As has already been stated, it is a well-established fact that most primitive tribes of men do employ to-day, and for ages have employed, physiotherapeutic measures in the treatment of disease and injury. We cannot suppose that homo sapiens had traveled very far the rough road toward civilization before he learned that the simplest and most readily available cure for a stone-bruised thumb was a process of cupping, facilities for which had been amply provided by Nature in the form of a quickly created vacuum in his own capacious mouth. While it may be argued by some whose habits of observation are not notable for accuracy, that this act was preceded by the employment of a psychotherapeutic restorative in the shape of an emphatic enunciation of the short, expressive word which still gives unspeakable comfort in like situations, I am persuaded by my own personal experiences, scattered promiscuously over a range of half a century, that the physiotherapeutic remedy was invariably utilized first.

Unnumbered eons, we are told, have gone by since our arboreal ancestor first hung his feet over a limb in his wind-rocked domicile and massaged his sore and stiffened muscles which told of desperate struggles with wild boar or cave bear, and other eons have doubtless passed since he first learned to pause on his way home from a moonlight party, at which the moonshine enjoyed may not have been all of lunar origin, to lave his throbbing temples with refreshing water from the mountain brook in the chill grey dawn of the "morning after the night before."

I am myself a great lover of a good dog. I owe, among other things, my life to-day to one, and I like to think that at least a million years separates me from my forbear who was first to learn that the anguish produced by a jumping

toothache could be assuaged, in a measure at least, by pressing his swollen jaw against the warm side of his four-footed friend even as Jubilee's partner does unto this day.

Can you not in your mind's eye, Horatio, see the great grandfather of the *Pithecanthropus erectus* or the Piltown man crawl in the early Spring from the low door of his cave to bare his wasted and twisted limbs, long racked with the pangs of rheumatiz, to the healing and rejuvenating beams of the Northward flying sun?

How many generations of men, think you, have come and gone since a boy first sat down upon the freshly honed, red-hot snickersnee of a ring-tailed hornet and found relief from the intolerable smart in the application of a poultice of cool moist earth to the punished part, or since the original juvenile gourmand was cured of his initial green-apple symptom complex through the production of a third degree erythema over the same habitually luckless locality by the heavy hand of a sleepless father?

It is a melancholy fact, contemplation of which must leave one saddened, that our unfortunate antediluvian ancestor had but little opportunity to avail himself of the benign influences of electrical therapy. Two measures only of this nature, so far as I am aware, were at his disposal. He could, and perhaps did, on occasions when the domestic tranquility of his cavern home was of a brand to make it seem desirable, rush out, blindly, into the raging storm and, Cassius like, "bare his bosom to the thunder stone" in the hope that his sufferings might be brought to a sudden and permanent ending. While it may be true, and I trust that it is, that this particular form of electrotherapy was in small demand when the world was young, it can scarcely be doubted that, then as now, the pain in many a blackened eye was alleviated and many an inferiority complex speedily dispelled by the timely utilization of high-voltage static sparks from the tingling lips of magnetic and resonant sweethearts, and just here, I am persuaded (if I may be permitted to digress a bit), may be found the legitimate explanation of the common use of the idiomatic term, "sparking" in designating a modality of combined physical and mental therapy which, while it may not be precisely as old as Adam, may be safely assumed to have been relied upon in many a crisis by Mother Eve long before a tempting blush had suffused the rounded cheek of that fated apple which peeped out so coyly from among the leaves of the wonderful tree that stood in the midst of the garden, and we may be sure that "the Lord saw that it was good."

Coming now, with your permission, to a consideration of certain events which occurred at a much later date, though still a long, long way back in that golden age of human history, reverently alluded to by modern writers as "The days of real sport" do you mind the wintry day you skated into an airhole on the mill pond a mile from home and got soaked to the very skin and the cold you had the next night when it seemed to you that your chest was tightly encircled by an iron hoop and that every cough tore loose a dozen mediastinal glands? Can't you still hear your anxious but confident little mother coming up the squeaky back stairs to your attic bedroom under the slant of the kitchen roof, with a towel wrung out of ice water in one hand and the tail of father's worn-out red flannel under shirt in the other, and don't your eyes pop out and your muscles set as she deftly turns back the patchwork quilts, quickly presses the icy towel down upon the hot, fevered skin of your heaving breast and covers it with the thick protecting pad of red woolen? You can hear yet the hoarse rasping squeals of protest and indignation that came from your raw and swollen throat as you wriggled and squirmed; and a voice that was softer than silence saying, "There, there, I know, son, I know; but it is only for a minute and you'll feel better soon." Of course you were relieved of that intolerable tightness in your chest, you admit it now, and you did drop off and sleep like a top till morning, didn't you? I'll tell the world you did!

"Do you remember way back when" the country suffered that record breaking hot spell during the haying season of the summer that you were thirteen and you raked and tossed and spread that long tangled clover out under the blazing, blistering sun with only the shade of your freckles to shield you from his desperate assault upon your very life? Recollect how one morning, with a dozen loads down and dry as tinder, your father awoke with the premonition that it would rain before night; and the way you struggled and strained and sweltered out there in the parched hayfield through the interminable hours of a sultry mid-July day till weak and exhausted from the heat and exertion, you clambered up onto the last load and started for the barn just as the sun sank, red and hectic, behind a great bank of clouds over in the West, and the first low rumbling thunder wallowed ominously to and fro along the horizon's edge? You recalled later that you felt a series of shivery little chills chase each other up and down your spine just then and that you were so dizzy that you had to lie flat on the load's top to keep from falling off; that

you could hear your own heart thump tumultuously under your hickory shirt as you climbed into the stifling, oven-like old loft which had been heated, by the sun without and the new hay within, seven times more than it was wont to be heated, and that there was an unpleasant buzzing and ringing in your ears which was altogether new and strange to you. You strove manfully to stow away the huge forkfuls of hot, dusty clover that rolled in upon you in never-ending, suffocating succession till suddenly a great darkness settled down upon you, and all is a blank for a time. And when at last you opened your eyes you were lying on the floor of the old spring-house "in the cooler room where the swinging shelves and the crocks were kept; where the cream in a golden languor slept, while the waters gurgled and laughed and wept." Your brown-eyed sister (was there ever such another?) was bathing your hot forehead in cool spring water with one hand and rubbing your aching arms with the other, while your frightened mother was binding mustard plasters upon the cramping calves of your sun-burned legs and the twitching soles of your stubble-scratched feet to relieve the congestion in your throbbing brain. Ah yes! it all comes back to you now as vividly as if it had happened but yesterday! And did those homely, physiotherapeutic remedies so skillfully and lovingly administered restore you to consciousness and comfort? Did they? H-m-m-m! You tell 'em!

Now we all learned from good old Captain Cuttle in the days when people still had time to read a wholesome book now and then, that "the value of an observation lies in the application on it" but, notwithstanding the fact that the science of physiotherapy has been shown to be as old as the rock-ribbed hills, it was not until the Great War came with its unlimited number of cases and its yet more unlimited number of available dollars to be used for purposes of experimentation that a comprehensive, systematic effort was made by medical men to establish a proper evaluation of the different so-called physical modalities or to make their utilization in the treatment of disease and disability a recognized procedure in medical practice.

That these physiotherapeutic agencies have amply demonstrated their effectiveness in many conditions whose nature is well understood and where accurate diagnosis is possible, needs no confirmation from me. I refer to such disease entities as surgical tuberculosis, herpes zoster, erysipelas, neuritis, synovitis, contusions, sprains, and many others equally well known; but I desire

here to stress particularly their usefulness in some orthopedic conditions concerning the exact nature of which we are ignorant, or in which a definite diagnosis is impossible, at least for a time, to arrive at. It will, I am confident, be readily admitted by all that the number of such cases is by no means negligible even in the best equipped hospitals and clinics. Consider, if you will, the matter of lower back pains. Pages, books, and libraries have been written on this ever recurrent subject. Dogs by hundreds have been experimented upon, countless cadavers have been dissected, roentgenograms by the million have been interpreted and misinterpreted, and patients in numbers that "would dizzy the arithmetic of memory" have been examined and re-examined, and while it is conceded that some things have been learned it must also be admitted that the diagnosis most frequently made to-day, "Just another one of those damn backs," is anything but satisfactory to patient and physician alike; and that the routine treatment consisting of salicylates, adhesive strapping, and a fervent prayer that the patient will change doctors, leaves much to be desired.

At a time when Minneapolis held the proud distinction of being the greatest lumber manufacturing center in the world there was a homely saying in common use here to the effect that "One man can see just about as far into a saw log as another." The lumber region to the north of us which supplied that great industry has ceased to exist as such; but the lumbar regions just north of our individual shirt-tails are still with us, and, if you will but take the trouble to substitute the words "lame back" for "saw log," the old saying still holds good in this town of sudden thermic changes and flivver-bedeveled street crossings. Now, if only those lame backs that were really seen into and correctly diagnosed in the past had been relieved of their painful symptoms our city would to-day be as famous for its lumbar inadequacy as it was for its lumber productivity in the good old saw mill days. These troublesome backs so numerous in our midst in which a diagnosis cannot be made with certainty must be treated symptomatically by the regular physician, or they will most assuredly be treated symptomatically by the irregular physician. That a large proportion of patients so afflicted can be relieved and are being relieved by physiotherapy at the hands of both regulars and irregulars may be readily ascertained by any one who will take the trouble to investigate. It is all very well to say that a diagnosis should be made before treatment is begun, and of course this is true, provided

a diagnosis is possible at the time the patient is first seen; but if the patient is in pain—and in these lower-back conditions he always is—treatment must be instituted at once even if diagnosis is not possible, and it frequently is not. I recently asked the man who, I suppose, sees more of these cases than any other man in the Twin Cities, this question: "About what percentage of the cases of lower-back pains do you think is treated without a diagnosis having been made?" His answer was short and to the point. "Most of 'em." With his estimate I most emphatically agree, and it will be a long while, I believe, before he will be justified in altering his opinion. It is never safe to disregard a fact simply because we do not fully understand it, and it is a fact, too long ignored by the regular physician, that in many of these cases of lower-back pain physiotherapeutic measures are helpful, diagnosis or no diagnosis.

Thrombo-angiitis obliterans—what is it? No two authorities agree, but all clinicians recognize in it an almost terrifying condition to treat because of the extreme suffering which it causes and the apparent impossibility of doing anything short of a high amputation for its relief, that is to say, impossible by any of the usual orthodox methods employed in the past, but it has been the experience of scores of reputable men during the last few years, both in America and in Europe, that most of these patients can be made comfortable and that in many the condition will clear up entirely under prolonged treatment with ultraviolet light and diathermy. My own personal experience has been limited to two of these cases, but the results were highly satisfactory, and they were the only cases of this disease that I have ever treated which did not go on to amputation. We must save these limbs if we can whether we understand the exact working of our remedial agents or not.

Metatarsalgia, Morton's toe, is another puzzle. We have all seen cases of this condition, but who of us has ever really known in any given instance just what was causing the trouble. Here is Dr. Fred Albee's clear, concise little statement concerning the etiology of this pestiferous ailment: The shoe is the direct cause of the pain, he says, and is a predisposing cause of weakness of the arch, particularly women's high heels and narrow toes. The improper shoe also causes the elevation of the fifth metatarsal with depression of the fourth which bears the weight of the outer border of the foot. Neuritis from direct injury is a less common cause of pain. Morton's explanation that the pain is due to pressure on the digital

plantar nerves is less plausible than that of contact between the neighboring heads of the metatarsal bones. Patients may exhibit an inherited predisposition to the affliction. Other causes are weakness or injury to the longitudinal arch combined with the same condition of the anterior metatarsal arch. A shortened tendo Achillis with equinus, bringing undue weight to bear on the anterior part of the sole, at which point pressure is further increased by calluses, or corns, under the depressed heads, may give rise to this symptom complex. The corns or calluses may be the sole cause of the condition if localized at a particular point. A local neuritis without mechanical derangement of the bones may be responsible for this disorder. Other causes are gout, rheumatism, general debility, and neurasthenia. Now, just what is the obvious conclusion to be drawn from this imposing ambiguous confusing, conflicting, noncommittal mass of verbiage? Merely this, that in metatarsalgia we have another saw-log into which no man has yet succeeded in seeing very far, and that its treatment, if it is to be treated at all, must of necessity, in most cases, be symptomatic. I do not believe that it is possible to arrive at a correct diagnosis in 10 per cent of these cases, but the condition, whatever its nature, is outrageously painful and disabling; something must be done to relieve the patient's suffering and enable him, or, more commonly, *her*, to get back to work. Symptomatic treatment of some form must be resorted to, and my own belief, based upon experience, is that physiotherapeutic measures will quickly relieve most of these sufferers.

In the same category with the above-mentioned diseases may be placed such more or less frequently met with conditions as epicondylitis, achillodynia, coccygodynia, erythromelalgia, and others with whose awe-inspiring and mouth-filling names every one is familiar, but concerning whose real natures precious little is known.

Many conditions theoretically possible of diagnosis are really so only after opportunity for prolonged observation, or by men who have had exceptional training not enjoyed by most doctors, or in patients capable of furnishing clear-cut histories, such as are not commonly obtainable; and these cases must be given treatment until they can be thoroughly studied or until their nature is made evident by the development of more definitely indicative symptoms.

We all know that the percentage of mistaken diagnoses (and remember that a mistaken diagnosis is really no diagnosis at all) is much larger in any doctor's practice than he would care to

admit, even to himself, and his therapy in such cases can hardly be said to be scientific, granted it is successful. It is, as a matter of fact, only symptomatic treatment that he gives although he is under the impression all the while that it is highly scientific. How many hips, for example, diagnosed as tuberculous, have cleared up entirely under what would have been scientific care for hips which were really the seat of tuberculous infection, but the very fact that they did clear up entirely proves, I believe, that they never were tuberculous, and the treatment was after all merely symptomatic. Time is really the great curative agent in these cases of mistaken diagnosis although the physician is frequently not aware of the fact, and many patients who cannot be induced to submit to drug therapy till time has enabled Mother Nature to employ to the full her curative powers can be persuaded to accept physiotherapeutic treatment because of the fact that they are thereby frequently given relief from pain which drugs do not afford or because they feel that an effort is really being made to do something for them.

I am aware that this may not seem to some to be scientific medicine, but until our knowledge of the various ills that flesh is heir to is a lot more definite and inclusive than it is to-day it will remain a necessary and legitimate method of procedure now and then if we are to hold and serve a multitude of patients whose troubles are beyond our power to diagnose early or who cannot be relieved by drug therapy or surgery, but who can and will be helped by other means employed either by ourselves or by some one else. Some relief is obtained by them through the methods adopted by the charlatan: time and the natural tendency of the body toward recovery do the rest. But these patients are wronged because the possibility of a diagnosis, which time will often make evident to the trained medical man, is denied them and the opportunity for the em-

ployment of necessary surgical interference at the most favorable moment lost.

Since, as is well known, the regular physician is not infrequently unable to make a diagnosis before treatment of some kind must be begun, he should avail himself, as far as possible, of every harmless means of giving relief from suffering till the nature of the trouble can be determined. The patient is not interested in medical science as such; what he is interested in is relief from his symptoms and he is going to have that relief if he can get it and he doesn't care how he gets it or from whom he gets it just so long as he gets it.

After all is said and done, our success in influencing pathology must depend in the great majority of cases upon our ability to bring about changes in the character of the circulating medium of a kind that will assist nature in overcoming infection or in accelerating processes of repair. That heat, cold, light, moisture, rest, activity, and other physical agencies already enumerated can be depended upon, in a measure at least, to bring about such changes in the vital fluids must be perfectly obvious to those who are at all observant of natural phenomena as exhibited constantly in animal and plant life about us. Surely we as trained physicians should not be less responsive to Nature's hints and suggestions than are the aborigines of Timbuctoo or the so-called dumb animals themselves.

In conclusion, I wish to reaffirm my conviction that the effects of physiotherapy are not merely or chiefly psychic, not by any means, but as definitely physical as those of any form of therapy, with the possible exception only of surgery. I am willing, however, in the interest of harmony, to concede this point, that in the matter of its successful administration the assistance of a good-looking, pleasant, tactful technician, like the effectual, fervent prayer of a righteous man, availeth much.

PHYSICAL EXAMINATION OF BOYS AND GIRLS OF THE FARM CLUBS

South Dakota State Fair, 1925

BY CLARA E. HAYES, M.D.

Director, Division of Child Hygiene, State Board of Health

WAUBAY, SOUTH DAKOTA

The physical examination of the boys and girls of the Farm Clubs during the past two years met with such approval by the parents of the boys and girls and resulted in the improvement

and correction of so many of the children's defects that the State College this year made the examinations a part of the regular Club program.

The Division of Child Hygiene made arrange-

ments for the examinations again this year. The State Fair Board built a separate building for the Red Cross in order that the rooms in the public health building which the Red Cross had formerly occupied might be used for the examination of the Club children. The south end of the building was partitioned into separate rooms

for the examiners. These changes gave the doctors a convenient place for work and greatly facilitated the examinations.

As is the custom with most of the work at the State Fair, the physical examination of the Club children was placed on a competitive basis, and the first prize, awarded to the highest scoring



Highest scoring boys of the Farm Clubs in the 1925 Clinic.

boy and girl, was a trip to the International Stock Show at Chicago in the fall.

The scoring was more carefully done than ever before, and the competition was keener, but the rivalry was wholly good-natured and happy. Several of the children who came this year were examined last year, and with but one exception their correctable defects had been corrected or improved. The one lad who had had no corrections done, and whose defect was a number of decaying permanent teeth, is the son of a father who still considers the welfare of his pure-bred hogs more important than that of his family and

GIRLS

- Grace Peckham, Bristol
- Nettie Morehouse, Bristol
- Ruth Cone, Trent

After the scoring had been completed, the above group returned for re-examination by a group of doctors who checked over the former examination records in order to select the most nearly perfect boy and girl from the highest scoring group. The final winners were Joseph Fullenkamp, Burbank, and Grace Peckham, Bristol.



Highest scoring girls of the Farm Clubs in the 1925 Clinic.

who refused to provide the needed dental work for his boy.

The following is a list of the highest scoring children:

BOYS

- Joseph Fullenkamp, Burbank
- Duane Clark, Worthing
- Guy Steely, Doland
- William Erps, Raymond

There was a total of 215 examined, representing the following counties:

County	No. of Girls	No. of Boys	Total
Beadle	10	2	12
Brookings	2	0	2
Brown	0	5	5
Butte	8	3	11
Charles Mix	3	14	17
Corson	0	3	3

County	No. of Girls	No. of Boys	Total	County	No. of Girls	No. of Boys	Total
Clay	2	5	7	Lincoln	4	8	12
Clark	1	3	4	Lyman	7	5	12
Codington	2	2	4	McCook	1	5	6
Day	2	0	2	Marshall	2	8	10
Deuel	2	0	2	Meade	3	3	6
Faulk	5	0	5	Miner	4	5	9
Fall River	2	0	2	Minnehaha	6	5	11
Grant	3	0	3	Moody	2	0	2
Hamlin	3	12	15	Roberts	2	0	2
Hughes	3	2	5	Spink	6	7	13
Jerauld	0	1	1	Stanley	2	7	9
Kingsbury	1	2	3	Yankton	5	6	11
Lake	2	0	2				
Lawrence	3	4	7		98	117	215

The service of the following doctors was given, the State Division of Child Hygiene paying only their expenses while doing the work:

General Physical:	Orthopedic:	Ear, Nose and Throat:	Dental:	Eye:
G. W. Potter Redfield	H. D. Sewell Huron	E. W. Feige Huron	E. H. Bryan Huron	H. L. Saylor Huron
Jean Jongewaard Div. Child Hygiene	R. C. Murdy Aberdeen	H. L. Saylor Huron	B. H. Kerr Huron	J. D. Alway Aberdeen
W. H. Griffith Huron	T. F. Ballard (2 days) Yankton	B. H. Taylor Huron	C. K. Walker Huron	E. W. Feige Huron
G. B. Irvine Lake Preston	D. R. Jones Rapid City	J. B. Gregg Sioux Falls	L. Calverly Wessington Springs	E. D. Putnam Sioux Falls
A. E. Bostrom (2 days) DeSmet	N. K. Hopkins Arlington			
B. M. Christianson Toronto	Guy Van Demark Sioux Falls			
G. H. Langsdale Highmore	B. H. Sprague Huron Clinic			

Last year 186 Club Children were examined. Up to October first forty-five of them, or 24.19 per cent, had reported corrections of their physical defects. Following is a summary of the 1925 clinic:

Number examined		216		No. of boys 117		No. of girls 99		
Number under average weight for age and height:								
7-10 lbs.	10-12 lbs.	12-14 lbs.	14-16 lbs.	18 lbs.	21 lbs.	total	%	
11	7	2	5	1	2	28	12	
Number over average weight for age and height:								
15 lbs.	19 lbs.	21 lbs.	22 lbs.	24 lbs.	34 lbs.	43 lbs.	total	%
6	5	3	4	3	4	2	27	12
Chest expansion:								
under 1½ in.	1½ in.	2 in.	2½ in.	3 in.	3½ in.	4 in.	5 in.	
15	14	37	42	42	20	21	8	
General examination—								
Head				No.	% of number examined			
Asymmetry				2				
Hair								
Poorly kept				10	5			
Scalp								
Unhealthy condition				14	6			
Face								
Asymmetry				7				
Neck								
Enlarged cervical gland				54	25			
Scars of cervical glands				2				
Poor development				2				
Goiter				10	5			

	No.	% of number examined
Chest		
Asymmetry	14	6
Ribs beaded	1	
Poor development	12	5
Heart		
Irregular	3	
Valvular disease	2	
Lungs		
Evidence of disease	4	
Glands		
Lymphatic, other than cervical	17	7
Abdomen		
Inguinal hernia	3	
Skin		
Lack of care	12	5
Rough	19	8
Eruptions	30	13
Birth marks or large moles	15	6
Muscles		
General muscular development poor	7	3
Nerves		
Evidence of chorea	13	6
Adhesions of prepuce	3	
Not vaccinated	126	53
<hr/>		
Orthopedic—		
Spine		
Curvature Lateral	17	7
Antero-post	12	5
Stiff	24	11
Scapulae winged	27	12
Arms and Hands		
Deformity from fracture	5	
Finger missing	1	
Other defects	7	
Legs and Feet		
Knock-knee	21	9
Bowed legs	15	6
Weak arches	58	26
Flat feet	29	13
Defects of nails and toes	16	7
Other defects	7	
Posture		
Bad posture	45	20
Abnormal gait	1	
<hr/>		
Oral and Dental—		
Mouth		
Gums abnormal	48	22
Palate abnormal	2	
Lips fissured	2	
Deformed	4	
Teeth		
Decayed—One	34	15)
Decayed—Two	23	11)
Decayed—Three	50	23) 56%
Decayed—Four	3	1)
Decayed—Five	11	5)
Discolored	134	62
Malocclusion	65	30
Permanent missing—One	29	13)
Permanent missing—Two	13	6) 19%
<hr/>		
Ear, Nose, Throat—		
Ears		
Position abnormal	1	
Shape abnormal	3	
Discharge	17	7
Hearing defective—right	4	) 3%
Hearing defective—left	3	
Nose		
Stenosis	7	3
Discharge	4	1
Septum abnormal	10	5
Throat		
Tonsils—Enlarged	47	21
Diseased	32	14
Adenoids	28	13
Inflammation	12	5
<hr/>		
Eyes—		
Strabismus	1	
Inflammation	5	
Blindness in one eye	2	
Vision defective	67	31

THE HISTORY OF TUBERCULOSIS WORK IN MINNEAPOLIS*

BY CHARLES B. WRIGHT, M.D.

MINNEAPOLIS, MINNESOTA

In reviewing the history of tuberculosis, one cannot be but struck by the fact that the modern campaign against this disease began, throughout English-speaking countries, about 1903. This was, of course, not coincidence. In all great scientific affairs we have, first, the basic discovery, the pioneers interpreting and re-adjusting human thought to a newer conception. Eventually, a time comes, possibly a generation later, when the world accepts and fully utilizes a new idea.

Due to the influence of Koch and Virchow, Germany was well along in organization with sanatoria, dispensaries, and compulsory registration. The work had also spread to Switzerland, Austria, and the Scandinavian countries. The United States had also a few minds quick to grasp the value of Koch's discovery of the transmissibility of this disease, but only a few such men as Bowditch, in Boston; Trudeau and Biggs, in New York; Osler and Knopf, in Philadelphia. Dr. Trudeau's sanatorium opened in the eighties, and there were a few private institutions for the care of tuberculosis in the United States.

The first state sanatorium for tuberculosis opened in this country at Rutland, Mass., in 1898, with Dr. Walter J. Marcley in charge. There were also a public dispensary for tuberculosis at the Eye and Ear Hospital in New York, attempts at registration in Philadelphia, and follow-up studies of the patients registered at the Johns Hopkins Hospital dispensary by two voluntary students in 1900. Work against tuberculosis was confined almost entirely to individual effort.

In looking over the files of THE NORTHWESTERN LANCET, I found a paper read before the Hennepin County Medical Association in 1894 by Dr. Thomas S. Roberts, who had recently been associated with Dr. Osler, Blockley Hospital, Philadelphia, outlining the methods of control and cure of tuberculosis practically as they are in operation to-day. Had the antituberculosis campaign done nothing more than correct the habit of promiscuous expectoration, in vogue at that time, judging from this paper, it would have justified itself. As for the sidewalk-sweeping skirt, what a shock this dignified young doctor would have received had a bevy of modern flappers been turned loose on Nicollet Avenue in

1894! In 1898 Dr. George D. Head published an interesting paper on "The Early Diagnosis of Tuberculosis." I also found papers by Dr. C. A. McCollum, Dr. H. M. Bracken, and Dr. W. A. Jones. Somewhat later an excellent paper on familial tuberculosis was published by Dr. Lampson. This was an excellent piece of clinical investigation done under the direction of Dr. G. D. Head. In 1903 Dr. Roberts again read a paper on "The Prophylaxis of Tuberculosis" at the Academy of Medicine, and the same year there was an exceedingly good paper by Dr. J. W. Bell on "The Early Clinical Manifestations of Pulmonary Tuberculosis." This is a paper which would be well worth reading by any present-day clinician.

The Minneapolis Medical Club, organized in 1896, by a group of young men in practice less than five years, deserves a great deal of credit for laying the foundation for future work along the lines of pure milk, pure water, pure food, and, notably, tuberculosis.

In 1903 Dr. H. L. Ulrich read a paper on "Dispensaries for Tuberculosis" which was a plea for the establishment of a tuberculosis dispensary at the University. This paper was read before the Young Men's Medical Club and resulted in the appointment of a committee, of which Dr. Ulrich was chairman, to confer with the University in this matter. A tuberculosis dispensary was actually opened at that time, but later was discontinued because of lack of patients.

The interest of the public generally in tuberculosis in English-speaking countries dates fairly definitely from the British Congress on Tuberculosis held in London in 1901. This Congress was opened with a great deal of "swank." The Earl of Derby presided, and patronized by Royalty, the meeting received great publicity in the lay press. Representatives were called upon from the medical profession of almost every country, the United States being represented by Dr. Osler. At this meeting Koch, who had electrified the medical world by the announcement of a cure for tuberculosis at the International Medical Congress in Berlin, in 1890, again took the center of the stage when he propounded his historic dictum, namely, "The Non-transmissibility of Human Tuberculosis to Animals," and vice versa. This started a controversy in England which was

*Presented before the Staff of the Lymanhurst Hospital, Minneapolis, January 26, 1926.

not settled until 1911 by a Royal Commission which had been working for ten years. The publicity of this Congress "sold" antituberculosis work to the public. In the next two years organizations were formed all over this country, and Minneapolis was no exception.

Antituberculosis work really began here in 1902, when The Associated Charities engaged one visiting nurse, Miss Jessie M. Blair, and later Miss Louise Jamme. The reports show that she visited fourteen cases of tuberculosis in the homes that year. The next year Mrs. George H. Christian engaged a nurse on full time for this work. It is interesting to note that in 1905 the visiting nurses report shows that they visited 309 cases of tuberculosis. This was the year Dr. H. L. Taylor opened the first institution for the care of the tuberculous in this state at the Luther Hospital in St. Paul. Governor Van Sant's Sanatorium Committee also reported in the same year, recommending the location of a sanatorium at Walker, Minnesota. This sanatorium was opened in 1905 with Dr. Walter J. Marcley in charge.

The Antituberculosis Committee of the Associated Charities, later the Hennepin County Tuberculosis Association, was organized at Mrs. Christian's home in 1903, the same house which is now being used as the Community Health Center.

In the fall of 1905 the Antituberculosis Society was very anxious to get an idea of the number of cases of tuberculosis in Minneapolis, as the doctors were not reporting. Some brilliant mind suggested getting a survey of the number of cases of tuberculosis by a personal interview of the doctors practicing in the city, and one C. B. Wright, a product of the wild and woolly West, originally, who had just returned, cut but unpolished, from the "Medical Jewel Factory" of Osler and Company, was offered this job, to which there was attached the munificent stipend of two thousand nickels, when a nickel would buy the largest glass in town with foam on top. Starting out with the medical men he knew, everything went swimmingly, but as progress was made outwards to that half-baked, poorly informed, suspicious, and self-satisfied fringe, which seems to be the ever-present capsule surrounding the brain protoplasm of our profession, the interviews became harder and harder until after a burly colleague had threatened to throw him down stairs, voluntarily the fight was given up and also the much needed stipend.

In the summer of 1906 a summer camp was opened for tuberculosis at Lake Street and the

River Boulevard. Dr. George D. Head, Dr. H. L. Ulrich, and Dr. C. B. Wright were the visiting physicians. Miss Louise Jamme was the visiting nurse in charge. This was real pioneering. In this age of steam-heated sanatoria, closed automobiles, and electric lights, one can hardly appreciate the fine optimism and the intense enthusiasm of this tent, candle, and mud period of tuberculosis work. One can hardly find words to describe the heroism of these early nurses, often wet, usually cold, on practically twenty-four-hour duty, but never complaining and always cheerful. All over this country nurses were doing this same kind of work, and in some places still are, with small pay and very little recognition. I cannot even remember the names of the early nurses. This camp took care of seventeen patients the first year. The next year the camp removed to the present site of the Thomas Hospital, which had been purchased by Mr. and Mrs. George H. Christian for the erection of the Thomas Hospital for tuberculosis. Miss Trinko was in charge of this camp. The next year, 1906, the Thomas Hospital was built and presented to the Lutheran Church by the Christians.

The Visiting Nurses then got a beautiful site for their camp in Glenwood Park, where they took care of forty children a year during the vacation months. In 1924 this camp was transferred to Glen Lake, The Citizen's Aid Society furnishing the necessary equipment. This was a splendid piece of work (the first work among children) and the Visiting Nurses, Board, and Medical Staff deserve a great deal of credit. I wish I had time to mention them individually.

In 1907 the first public institution for the care of tuberculosis was opened at Camden and called "Hopewell." Due to the fact that it was soon filled with far advanced cases, it was re-christened "Hopeless" by the public, and it was difficult to get any patient to go there unless the patient was freezing, starving, or mentally unbalanced. With the advent of Dr. Walter List, in 1920, this institution was re-christened "Parkview," was re-staffed, and put on a basis which bid fair to develop into a splendid, useful institution for the care of tuberculosis. Many of us thought, and still think, that the conversion of this institution into a home for chronics, much as this was needed, and the turning over of all the tuberculosis work in Minneapolis to Glen Lake, in 1925, was unfortunate. However, if we get, eventually, a pavilion for tuberculosis in connection with the General Hospital, we shall be more than satisfied.

In 1908 the two tuberculosis nurses engaged by

Mrs. Christian were given headquarters in the City Health Department, and in 1912 they were taken over by the City Health Department, and the present department, under Miss Sprague, is the result. Handicapped by lack of funds and nurses, the function of this department was confined largely to statistics, education, and enforcement, the Visiting Nurses doing the bedside nursing among the tubercular patients.

In 1909 the first tuberculosis dispensary was opened, not at the University, as Dr. Ulrich and his committee had planned in 1903, but at the General Hospital under the direction of Dr. P. M. Hall and the Health Department nurse. The University tuberculosis clinic was not re-opened until 1916.

The first evening clinic for the tuberculous was opened at the General Hospital by Dr. Marcley and the nurse from the Health Department. This was the first night tuberculosis clinic in Minnesota. The second evening clinic was opened at the University Hospital by the Hennepin County Tuberculosis Association and the Health Department.

In 1913 the State Legislature put at the disposal of the Advisory Commission \$500,000 to aid in the development of a County Sanatorium. Hennepin County at once took advantage of this opportunity. The Board of Regents of the University offered the ground for the erection of a sanatorium on the river bank near the University Hospital. This site was strongly favored by Dr. Head and others, and if they could have had sufficient ground, it would seem like an ideal location. For various reasons, however, partly on account of the neighbors' objections, and, more important still, the size of the ground offered, it was decided the sanatorium should be located at Glen Lake, where it began operations in 1915 under the direction of Dr. E. Marriette, and in ten years has grown to an institution of six hundred beds—one of the finest institutions of its kind in the country. To the County Sanatorium Commission, consisting of E. C. Gale, Joseph Kingman, and Dr. S. Marx White, largely belongs the credit for this development. The Citizen's Aid Society built and equipped the Children's Building at Glen Lake, called the Leonora Hall Christian Sanatorium for Children.

The Visiting Nurses Association, The Hennepin County Antituberculosis Association, and many other organizations, as well as individuals, have done splendid work in this campaign. Drs. H. M. Bracken, Frank Milbrook, T. S. Roberts, H. L. Ulrich, G. D. Head, J. W. Bell, Walter J. Marcley, and P. M. Hall were the constructive

leaders in this campaign in these early years, and many of them still are. The master word, however, is the name of "Christian." The first tuberculosis nurse, the first tuberculosis camp, the Thomas Hospital for the tuberculous, the children's building for the tuberculous at Glen Lake, the Visiting Nurses' Camp for the tuberculous, the Cancer Hospital, The Citizen's Aid Society, The Citizen's Clubs, The Community Health Center—what a debt of gratitude the citizens of Minneapolis owe to the clear-visioned and public-spirited man and woman who have seen such a lofty standard for the use of money!

The most unique contribution of Minneapolis, however, to the problem of tuberculosis—and tuberculosis is still a problem, much more so than was dreamed of in the days when it was first found to be curable—was Lymanhurst Hospital. To understand the background of Lymanhurst we must go back to 1907, when, largely through the influence of Dr. J. P. Sedgwick, The Women's Club and the Associated Charities sponsored the first efforts to systematically study the physical well-being of school children. The examining physicians volunteering for this work were Dr. Mabel Ulrich, Dr. J. P. Sedgwick, Dr. Margaret Nickerson, and Dr. C. B. Wright. Fourteen hundred children were examined in all, and 88 per cent of these children showed some physical defect: 57 per cent were found to be in need of some special medical attention. This work not only aroused the public in Minneapolis to the need of some supervision of school children, but inquiries were received from all parts of the country. The next year two nurses were put on duty, and in 1909 Dr. Keane was employed as head of a new department of hygiene in the schools with a number of part-time physicians to do this work.

In 1911 the first fresh-air school was opened and named the "Trudeau School." The addition of Lymanhurst to the department of hygiene is so recent that it needs little comment. By the gift of the site by the Lyman family, the erection of what was supposed to be a children's hospital, but was later found to be unsatisfactory for this purpose, finally the turning over of this institution to the Department of Hygiene under Dr. Harrington, who came in 1920, the opening of the Lymanhurst School in 1921 with Dr. J. A. Myers as director, as a day-school for children under observation for tuberculosis, the opening of the out-patient department in January, 1922, and the Observation Ward in February, 1922, by this department, Minneapolis took first rank in antituberculosis work in the schools. This was

the first special children's clinic in the state and the only one of its kind in the United States.

The study of the early manifestations of tuberculosis in the child and the placing of these children under the proper surroundings is the last word so far in the campaign against tuberculosis. Receiving all of the under-nourished and in any way suspicious children, the careful study of this group by men trained in various lines of work, the postgraduate atmosphere in this institution where young men are devoting their time, free of charge to the City, to the study of these cases and to the wider study of tuberculosis in the preparation of papers and in the new points of view obtained by listening to speakers of national reputation, will be of a value hard to estimate in the future of Minneapolis.

This is, indeed, a glorious record of achievement in Minneapolis in less than a generation. What of the future? Nothing epoch-making has been added to our knowledge of tuberculosis since Koch's discovery. True, we have the *x*-ray diagnosis and heliotherapy and improved surgical treatment of special types of tuberculosis. The Research Committee of the National Tuberculosis Association is doing splendid work in clearing away the fog surrounding our conception of the problem by attacking the tubercle itself, which contains within its almost microscopic dimensions the life history of this disease. If they can discover the biologic forces determining the formation and multiplication of the first tubercle in the human organism, it will open up a new era in the solution of the whole tuberculosis problem. " 'Tis a consummation devoutly to be wished."

In the light of our present knowledge better organization for the early recognition of tuberculosis seems to be our best weapon, with periodic

examinations for the pre-school child, the Lymanhurst plan for the school age, health inspections in advanced schools, the medical organization of industry which is going forward with great rapidity, the periodic medical inspection of groups, such as clubs, churches, insurance companies, lodges, and even medical societies, which is already being done on a large scale. For the individual still unorganized,—there are still a few left,—the American Medical Association is putting on a campaign which I believe is the sanest for the future, along public-health lines, and that is the campaign for periodic health examinations.

It seems a hopeless task to educate the public to a point where they can recognize the early symptoms of diseases such as tuberculosis, cancer, heart disease, diabetes, or nephritis, and then seek the proper specialist. Periodic health examinations put this responsibility on the medical profession where it belongs. This presupposes that the profession will assume this responsibility in a sincere way, prepare themselves thoroughly for the work, and appreciate the fact that when an apparently healthy individual comes to the doctor, he deserves just as careful an examination as the man who is apparently ill.

There is a strong feeling among thoughtful men in the profession, like Dr. Billings, that we need to-day a return of the family practitioner; not the family practitioner who was rich in sentiment for his patient but poor in the knowledge of medicine, but a well-trained clinician who will not attempt surgery except in emergencies without a long and sufficient training in operative technic, who has all of the personal relationship and sentimental feeling of the old family doctor, re-enforced by the modern knowledge of disease and preventive medicine.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of December 9, 1925

The Minnesota Academy of Medicine held its regular monthly meeting at the Town & Country Club on Wednesday evening, December 9, 1925, at 8:00 P. M. There were 38 members and 1 visitor present.

The meeting was called to order by the vice-president, Dr. F. E. Burch.

Dr. L. E. Daugherty (St. Paul) reported two cases, as follows:

CASE 1.—A Case of Rupture of the Tendon of the Long Head of the Biceps Muscle.

G. L., section laborer, married, 37 years of age.

On November 2, 1925, he lifted a big piece of ice. The forearms were flexed at a right angle. He felt a sudden acute pain in the region of the right shoulder and upper arm. He continued working, but the pain in the right shoulder persisted and he noticed some deformity of the right biceps muscle. He stated that the right arm was weaker than the left, particularly in the motion of flexion.

Examination showed a well-developed man. When the right arm was flexed there was a noticeable deformity of the biceps muscle. A hard indurated area about two inches long could be felt in the outer and upper margin of the muscle.

Operation: An incision was made over the anterior part of the upper arm. The tendon sheath

was opened, and the tendon was found turned around in the sheath so that the injured end was near the muscle. It seemed to have been torn from its point of insertion. By splitting the pectoral muscle in front of the deltoid, the coracoid process was exposed. The tendon of the long head was passed through the short head of the biceps and sutured to it and was then attached to the coracoid process.

This method copies the one used by Dr. E. L. Gilcreest in the last transactions of the Western Surgical Association.

CASE 2.—A Case of Tubercular Empyema Apparently Cured Following Thoracoplasty.

J. B., female, aged 22 years. Father died of "nephritis." Mother living and well. Three brothers living and well; one brother died of "heart disease"; one brother accidentally killed. Three sisters living and well. No family history of tuberculosis.

Past history was negative except for diseases of childhood.

Present history: Patient was always well until the summer of 1919, when she began to tire easily. In April, 1922, shortly after a pulmonary hemorrhage, she was admitted to the service of Dr. Geer at the Ancker Hospital. At that time an advanced tuberculosis of the upper right lung was found, and the sputum contained numerous tubercle bacilli.

On May 11, 1922, artificial pneumothorax was induced, and a good collapse was obtained followed by relief of symptoms. There was a slow gain in weight, and the sputum became negative.

In December, 1922, there was evidence of an effusion in the right chest which increased in volume. There were no symptoms at that time and the sputum remain negative.

In July, 1923, in spite of the effusion in the right chest, there was no increase of temperature, and she was allowed to go home for a vacation. The sputum was still negative for tubercle bacilli.

In November, 1923, there was a return of daily increase of temperature, and one day, while eating candy a severe choking and coughing spell raised a cupful of sweetish purulent material.

On March 24, 1924, it was necessary for her to return to the hospital, and a right pyothorax with a bronchial fistula was found. On aspiration, the fluid contained tubercle bacilli, but no other organisms. Repeated aspirations and injections of formalin and methylene blue, by Dr. Geer, did not affect the effusion, and the bronchial fistula remained open.

I first examined this girl in October 1924, when the above condition was present. There was some cough; the general condition was fair; her weight was about 96 pounds, and the temperature 100°. An x-ray of the chest showed a complete collapse of the right lung with considerable fluid in the right thoracic cavity.

On October 30, 1924, under local and gas anesthesia, the first stage of an extra-pleural thoracoplasty was done and the 10th, 9th, 8th, 7th, 6th, and 5th ribs were resected. The patient made a good recovery, and on November 15, 1924, the second stage of a thoracoplasty was performed, and the 4th, 3d, 2d, and 1st ribs were resected. Again there was an uneventful recovery, and an x-ray of the chest showed about a 50 per cent reduction of the right chest cavity.

In March, 1925, the bronchial fistula had closed.

The lung gradually expanded and filled the partially obliterated thoracic space.

On April 30, 1925, the parietal and visceral pleurae were in apposition and there was no fluid present.

At a recent examination, October, 1925, there was no increase of temperature or cough; her weight was about 121 pounds, and clinically she was well. This girl is as active as any normal individual and recently applied for training at the school for nurses at Pokegama.

DISCUSSION

DR. E. K. GEER (St. Paul) (by invitation): If one looks over the literature on artificial pneumothorax he will find the incidence of pleural effusions in collapse cases varying from 40 to 100 per cent. From 5 to 15 per cent of these effusions become purulent, with only tubercle bacilli found in them. If he looks for the treatment of these purulent effusions he meets with disappointment because the treatment is mentioned in anything but optimistic tones. Aspiration is mentioned and usually that is all.

From my experience in a rather large series of pneumothorax cases, and I have treated about 110, I noted serous effusion in practically all, with 10 per cent becoming purulent. In attempting to clear up these tuberculous empyemata, I ran through the literature rather thoroughly and found aspiration advised as a palliative measure. By chance I ran across a statement of John B. Murphy that 2 per cent formalin in glycerin might clear up some of these stubborn empyemata.

Two of my tuberculous empyema cases cleared up by repeated aspirations; two others by formalin injections; and two by thoracoplasty.

This girl, whose case has been presented to you, had a bronchial fistula for about a year without getting a pleural pyogenic infection. The whole thing responded so nicely to thoracoplasty that I think we will resort more frequently to thoracoplasty in similar cases. She did have a severe type of pulmonary tuberculosis when she came under our observation. The pulmonary lesion was controlled by injections of air. Then she developed a pleural tuberculosis, which was more difficult to control. I think this is a very brilliant example of what thoracoplasty will do.

DR. DAUGHERTY: I think this problem of tuberculous empyema is a very great one, and if we can save even a few of these patients with a thoracoplasty it is worth while.

Dr. W. P. Larson (Minneapolis) read a paper entitled "The Value of Surface Tension Depressants in Detoxifying Bacterial Toxins for Immunization."

DISCUSSION

DR. F. W. SCHLUTZ: The work and results of Dr. Larson are very impressive. It could easily come to pass that his results will have a revolutionary bearing upon the contagious-disease problem. The manner in which he can make diphtheria and scarlet fever immunization practically safe and absolutely certain is truly remarkable. Few of us here now probably realize what far-reaching effects this may have. We have tried his methods in the University Hospital and in the Out-Patient Department, and

can entirely confirm the results presented here tonight.

I am firmly convinced that Dr. Larson's work represents a tremendous advance over the results obtained in Chicago and New York.

I would like to ask Dr. Larson whether there is any mechanism of accurately testing out or determining the point where the toxin has the maximal effect. It seems to me, from a technical standpoint, it would be a good thing to have some mechanism of standardization.

DR. J. T. CHRISTISON: Dr. Larson has referred to the work done by my associate, Dr. Colby, and as I have had some part in this it may be of interest to you to know that we have about a thousand cases thus far. We began by using the material that the Doctors Dick gave us. The greatest objection to that was that the children had to have three injections. Then Dr. Larson announced that his soluble toxin would probably do away with the three injections, and we began using that toxin. The results he has given you are unquestionably the results we are all getting from that type of material. There has been one case following the immunization treatment that was given to the children in the school Dr. Larson mentioned. Those children, theoretically, ought to have had a lot more scarlet fever; therefore, there must be some particular virtue in this type of immunization. In those instances where one child had scarlet fever and the rest of the family have been immunized, no other cases of scarlet fever have developed.

We have had only one case in which there was any apparent reaction, and that was my own daughter who is about ten years old and who gave a very positive reaction following a 4,000 skin-test dose. There were no fever and no discomfort, but she had a very apparent rash.

I am getting to the point where I say to the mothers that there is not now much excuse for people allowing their children to have scarlet fever or diphtheria. With the results we are getting, I think I am quite justified.

DR. J. F. HAMMOND: I would like to ask Dr. Larson how dangerous it really is to use the old method of inoculating against diphtheria. People are asking us as to the advisability of having their children inoculated. What is the danger of anaphylaxis in future treatment?

DR. A. SCHWYZER: Our sincere thanks are due Dr. Larson for having brought this observation before the Academy. It seems to me, as I listened to this paper, that we have here a momentous finding; that we have something of enormous value. As the father of three children who not long ago had injections against diphtheria (the serum injection), I am quite impressed with the value of having an immunization that does not need the horse serum. When you hear that you could previously give 125 of certain units and now can give 3,000, the first question that comes to mind is "Isn't it that this toxin undergoes a chemical change with the soap?" It seems, however, that the toxin is not changed, but the process, as Dr. Larson explained it, consists simply of putting a soap layer around the molecules. Thus the toxin is only very gradually freed in the course of time in the body and is, therefore, acting for a long while. Dr. Larson could even

precipitate the soap and free the active principle and again have the toxin action. I think it would be very interesting if Dr. Larson would tell us how he explains the action of the soap and what the factor of reduction of the surface tension is doing in the physical sense.

I think we have listened to something that is of the highest importance and value.

DR. BURCH: I am sure I express the sentiments of the Academy in thanking Dr. Larson for coming before us and giving us this very original and valuable work he is doing.

Dr. George E. Fahr (Minneapolis) read a paper entitled "The Fatigue Factor in Cardiac Failure."

DISCUSSION

DR. J. G. CROSS (Minneapolis): The term "heart failure" as often used as a cause of death is the "refuge of distressed diagnosticians," to quote from Osler's remark in another connection. However, in its true sense, as used by Dr. Fahr to describe the failing function of the mechanism of the heart to maintain circulation, it covers almost the entire field of heart disease, since such failure may come about as the result of valve, muscle, or nerve defect. Dr. Fahr has presented clearly the sequence of events which take place in the heart affected by myocardial trouble of a non-infectious character, as distinguished from inflammatory infections of the cardiac tissue. He states that heart failure is always the result of increase in the intracardiac (blood) pressure. This is not so far from the teaching of thirty years ago of "back pressure" and failure of one chamber after the other. At that time we were not so familiar with the toxic causes of muscle degeneration nor with the disturbances of conduction of the impulses. Undoubtedly, Dr. Fahr's meaning is that the increase in pressure is an event in the course of a failing heart, itself the result of a previous defect. The essayist, of course, did not pretend to enumerate all of the factors leading to heart failure or myocardial failure. That would be too large a task. He wisely chose to limit the discussion to the series of events leading up to the incompetent heart muscle.

It would be an error to believe that the problems concerned in heart failure are now entirely understood. We are still speculating on the cause of some heart phenomena, the recognition of which is not only difficult during life but not always cleared up at autopsy. It has been supposed for a generation that Prof. Welch's explanation of recurrent attacks of pulmonary edema, on the basis of a disproportion between the power of the right and the left heart, was correct. This was propounded when he was a student with Conheim. Prof. Welch recently told me that this explanation did not account for many cases of such trouble, nor would it explain why so few patients with marked disease of one chamber of the heart escaped attacks of lung edema. This is another instance of the abandonment of the old "backing up" idea.

We are indebted to Dr. Fahr for his sharp distinction between infectious myocardial troubles and toxic muscle defects which are purely physical and toxic.

DR. J. F. HAMMOND: Dr. Fahr spoke of the length of time it took for the increase in the size of the heart in hypertrophy. I would like to ask Dr. Fahr if, in the progress of a case when it is recovering clinically, he can see any appreciable decrease and how much in the size of the heart. One heart was recently reported to have been 3 inches too large and after ten days' treatment it was 2 inches smaller. I would like to ask him also how long, during treatment, he thinks it is well for these patients to stay in bed and if it is good for them to have absolute rest or some exercise if they have vague heart symptoms such as pains, etc.

DR. J. S. GILFILLAN: I agree with Dr. Fahr in almost everything he said, especially on leaving the teeth in. Why the failure of these hearts takes place at a certain time, one cannot always tell. I think that the name myocarditis is used a great deal now just from force of habit and that a great many people who use it do not mean myocarditis, or they do not mean by that that there is an inflammatory condition in the heart muscle. We use it now as a joke. But that is one reason for the persistence of the term. I think Dr. Fahr is right on the importance of rest in these cases. That really is the great thing for them. If I had to do without either digitalis or morphin I would rather do without the digitalis in many cases, as they cannot get rest without morphin. Both are important, of course, but one is of greater importance than the other.

DR. E. L. GARDNER: I agree absolutely with Dr. Fahr. We might discuss the relation of focal infection or any other toxemia, affecting the body as a whole, which indirectly produces a premature breakdown of cardiac compensation. I think that it is only in an indirect way that focal infection has any relation to cardiac failure. I know of no evidence which can be obtained from a pathological examination of the heart which indicates inflammatory changes,—a true myocarditis; on the other hand it is not safe to assume that focal infection or other toxemias do not impair myocardial function just because we cannot demonstrate structural damage under the microscope; clinical evidence, unreliable as it may often be, is to the contrary.

I agreed with Dr. Gilfillan that much of the argument arises from the use of a faulty terminology. The term "myocarditis" should be reserved for conditions due to true inflammatory changes in the myocardium and not applied to all myocardial weakness regardless of cause and positive demonstrable structural damage. The clinician has carelessly used the term to include any myocardial failure; such terms as "cardiac sclerosis," "toxic myocardium," "weak myocardium," etc., should be used, remembering all the time that the heart alone is not singled out, but is a symptom of a general body disfunction. In such a sense I believe we would all agree to remove any toxic or nutritional cause affecting the body, including the myocardium. It is, therefore, very important to maintain the patient's good health to prevent cardiocirculatory breakdown, especially where there has been some former mechanical damage, such as myocarditis, valvular disease, or pericardial adhesions.

—JOHN E. HYNES, M. D.
Secretary.

BOOK NOTICES

THE TECHNIC OF LOCAL ANESTHESIA. By Arthur E. Hertzler, A.M., M.D., F.A.C.S., Professor of Surgery in University of Kansas; Surgeon to the Halstead Hospital, Halstead, Kansas; to St. Lukes Hospital, Kansas City, Etc. Third Edition, with 140 Illustrations. C. V. Mosby Company, St. Louis, 1925.

This is a concise treatment of the field of local anesthesia, and is conservative in its claims. It gives due emphasis to the desirable places for general anesthesia, considering it the mainstay of general surgery. It does not recommend complicated apparatus, nor time-consuming methods. It considers local anesthesia a success only when there is no pain. If the patient must be stupified with morphine or scopolamine to make the local a success one might better use the standard inhalation anesthetics.

—H. E. HARBO, M.D.

THE THERAPY OF PUERPERAL FEVER. By Dr. Robert Koehler, formerly Assistant of the Gynecological Department of the Krankenhaus Wieden (director: Hofrat Dr. Josef Halban) in Vienna, Austria. American edition prepared by Hugo Ehrenfest, M.D., F.A.C.S., Associate in Obstetrics, Washington University, School of Medicine, Obstetrician and Gynecologist of the Jewish Hospital; Consulting Obstetrician to St. Louis Maternity Hospital, St. Louis. Cloth, price \$4.00. Pp. 276 with 27 illustrations. C. V. Mosby Co. St. Louis, 1925.

Since the publication of Arnold W. W. Lea's monograph on puerperal infection, in 1915, no very important progress has been made in the field of puerperal infection except along the line of treatment. This progress is well presented in Robert Koehler's "Therapy of Puerperal Fever," translated from the German to English by Hugo Ehrenfest of St. Louis. The title is a literal translation, which accounts for the term *puerperal fever*, a phrase fast becoming obsolete among English writers on the subject.

The volume presents chiefly the general treatment, the surgical treatment, medical treatment, and chemotherapy. The latter embraces serums, vaccines, colloids, dyes, leucostimulants—all of them. As pointed out, combined factors of treatment are only of value when each element has its own specific action. Therefore, these combinations of drugs which all have for their action stimulation of leucocytosis are of no greater effect than if one drug alone were used.

The treatment of puerperal infection has apparently not progressed as much as the enthusiastic desires of students of the subject would wish. Surgical treatment has remained about the same,—a difficult major operation on a poor surgical risk, an exhausted patient, of necessity, an operation undertaken by only the most courageous surgeon, with mortality figures no better than those obtained by other obstetricians under conservative medical treatment, depending mainly on rest, fresh air, nutrition, baths, catharsis, with injections of one or another leucostimulant and strict avoidance of local manipulations.

—DANIEL H. BESSESEN, M.D.

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The Soo Railway Surgical Association
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THE A. M. A. MEETING AT DALLAS

The American Medical Association members are looking forward with interest to the next meeting of the Association, to be held in Dallas, Texas; and the time of the meeting should be kept in mind, April 19 to 23. This date is probably chosen on account of the weather, which is likely to be good at that season of the year, although any Dallas citizen would resent even the suggestion that there was any question about the weather at Dallas at any time of the year. However, to make things doubly sure and to attract as many members as possible from the northern and eastern states this happy time was decided upon. Those who went to New Orleans will remember that the American Medical Association held their meeting in April there, and the weather was delightful, although a little warmer than in the Northwest.

Every preparation is being made for the entertainment of the Association members, and those who attend are assured of a delightful time. Of course Texas will do something unique for the entertainment of its visiting medical men, and there is to be a real barbecue for doctors given by Dr. John H. Dean for the five thousand physicians, and guests, and exhibitors, in all totaling ten thousand visitors to the Lone Star state. This is an unusual feature planned for the occasion. Eminent physicians (the information should

have been *surgeons*) will witness carving under the supervision of Max Hahn, for forty years expert "barbecuer" of Dallas. *The Journal of the A. M. A.* says: "Last June Dr. Dean selected eighty cows with calves about six weeks old out of a herd of 4,000. These cows were selected according to size, vigor, and milk-producing qualities, so as to insure a rapid, healthy growth for each calf. The eighty cows and calves were turned into a six-section pasture which had not been used, and which contained an abundance of fresh food and water, assuring the cattle of a properly selected, scientific diet. It is customary to wean calves from the mother after six months, but this plan was not followed with the calves to be used for the barbecue, in order that they might secure their mother's milk, so as to provide the best nourishment for rapid, healthful growth. A full diet was begun for the cattle in December. The calves will be killed in advance of the session and the meat prepared so as to be in the best condition for the barbecue. Mr. Tony Bazar, with a corps of able assistants, has been delegated to arrange for the service during the barbecue."

If one wants to look up the history and status of Dallas the information can be secured through the Dallas Chamber of Commerce by simply writing and asking them to send one something on Dallas. You will find that Dallas is a real city, in spite of the fact that it is only fifty years old; it has a population of approximately 248,800 people (at the beginning of 1925). This, of course, covers roughly a six-mile radius, and it also takes in the immediate suburbs of Dallas, which are said to be extraordinarily beautiful, with great wide tree-lined and grass-lined streets. Dallas is said to be the largest city in the Southwest and has all the conveniences of any city at any place, approximately. You can buy oil or golf balls there. You can see all the things you see in a large city and find that its municipal government is of the commission form and has been in existence some twenty-one years. It has 230 miles of paved streets and its Oak Cliff viaduct is 5,840 feet in length, said to be the longest concrete viaduct in the world. It has a fine street-railway system, and is the headquarters for the state fair of Texas. Innumerable railroads enter and leave Dallas, and its trade territory is very large and is partly responsible for the advancement of Dallas, which has approximately 4,000 acres in public parks and playgrounds; so there will be plenty of opportunity for out-of-door life. No one need hesitate about writing, and writing early, for hotel reservations, nor need he be dis-

appointed if he finds that some of the better hotels are already over-reserved. The report is that they are putting up a new hotel which even overtops the Adolphus, which is the largest hotel there, but that will not be ready in time for this meeting. You can get almost anything you want in Dallas, for they have invested twenty-five million dollars in "guest rooms" for visitors. And the total capacity of the hotels there, at the present time, is 17,500, consequently they can very easily house all of the men who attend the A. M. A. meeting. Among the leading hotels are the Adolphus, the Baker, the Jefferson, the Hilton, the Southland, Melrose Court, Stoneleigh Court, Maple Terrace, Park Hotel, and Forest Inn. The four last named are rather of the family-hotel type. Of course there are other hotels like the Waldorf, the St. George, and the Milan. You may choose your hotel if you please and write to a hotel for reservations, but your letter will probably be turned over to a committee of the Chamber of Commerce who will locate you or assign you to whatever hotel is accessible.

Irving S. Cobb, in a recent magazine article, says: "I sure do like Texas." And it is further added, "You, too, will like Texas, the state with a vivid personality, where men are men and women are governors."

If you are going to Dallas from either of the Twin Cities the fare will be \$35.72 one way, with an extra charge of \$12.00 for a lower berth or \$7.50 for an upper berth. There are no compartments on most of the trains going from here to Dallas, but the railroads have kindly consented to sell drawing rooms for the purpose of furnishing sleeping apartments. These will cost a little more, \$42.00 one way. However, when you buy a ticket you must state to the ticket agent that you want a receipt for your fare to the convention, and then you will be entitled to half-fare returning. The reservations so far made promise that the meeting will be well attended.

MEETINGS OF SOCIETIES IN THE IMMEDIATE VICINITY

The Minnesota State Medical Association is bound to be a great success this year; but if they can overtop the success of last year's meeting they will be doing very well. The meeting takes place in St. Paul May 17 to 19. This meeting, of course, will attract, as it usually does, many of the leaders of medical men in Minnesota, and as it is to be given at the headquarters in the St. Paul Hotel and the meeting-place in the Auditorium in St. Paul, we may look forward

to a very pleasant time for three days at least. So far none of the program has been outlined; it is rather early for that sort of thing. It is very difficult to get writers who will prepare their papers, or at least think up subjects, far enough in advance to give one an opportunity to study it and eventually discuss it. At all events, all of the Minnesota men should be ready and make every preparation for attending the meeting.

Directly following the Minnesota meeting will be the meeting of the South Dakota State Medical Association, to be held in Aberdeen May 19 and 20—a little conflict in dates but not enough to be serious because many of the Minnesota men will attend the South Dakota meeting, whether or no, inasmuch as they always have a good assembly and a thoroughly satisfactory state program.

Then, in order not to rush the medical season, the North Dakota State Medical Association will meet at Minot on May 25 and 26. Again, this will attract a number of Minnesota and South Dakota men. So we might as well make up our minds this time, and perhaps for all time, to attend three state meetings in rapid succession. Then we have it over with, and after that we should only have to attend a few meetings during the summer held at various summer resorts. Of course, the writer does not for a moment think that we are crowding the medical society meetings at all, but it looks that way to a man who feels he must attend all the meetings possible. To a Minneapolis man, surely, it looks like an easy task because he attends so many meetings of medical men and has grown so accustomed to it that it is never for a moment a bore. He attends his evening monthly meeting of the Hennepin County Medical Society; he attends the noon meeting four times in the same month, where he can have his luncheon, chat with his friends, and have a real social time. Then if he belongs to several hospital staffs he cuts out several evenings more for hospital-staff dinner meets, and listens to a few instructive papers afterwards. Most of our staff meetings have been improved, however, as it has been learned that it is economy and the meeting becomes more attractive when they have a dinner at about 6:15, consume their food hurriedly (as most medical men do), and then have an intellectual treat, medical or otherwise, and adjourn the meeting promptly at 8:00 P. M. That is the habit, and a very good one, even if it does take one away from home seventeen times a month.

It is very important for the three States (Minnesota, South Dakota, and North Dakota)

to keep in very close touch with one another, for they have much in common and their medical men have enjoyed a very close association, both socially and medically. It is well, too, for neighboring state medical men to get personally acquainted with one another. It is to our mutual profit, intellectually, as well as individually. In the last two or three years the state medical programs have been very largely clinical, and Minnesota must look to its laurels to keep up with South Dakota and North Dakota because they have very good clinical associations, very few papers, and much more solidity and conviviality in their spare hours in which no medicine is talked.

Acknowledging that we have many medical meetings to attend, it really is not such a burden as it may seem, and, although medical men sometimes become harrassed and tired with so many meetings and doubtless many of their families object to so much leaving home, it is well to keep on the top of the medical wave and remember that we are all working toward one objective, the health of and help to our patients. It is just as well to get in your reservations for hotel accommodations in the Northwest as it is in Texas, so make no mistake and send in to the proper committee for what you want. More details will be given in subsequent issues, and as soon as possible the programs will be published.

"ADULT INFANTILISM"

The above title was suggested by an article in the January number of *Harper's Magazine* by Dr. Joseph Collins, of New York, under the head of "Childish Americans: A Diagnosis of Our National Malady." The title, the author, and the article struck the writer as being worth calling attention to, and he has chosen to quote from the article very largely.

Dr. Collins believes that as a people we are deficient on account of maldevelopment. He suggests that there is much to indicate that we are a nation of adult infants and that this social maladjustment is responsible for more family discord, more intellectual vagrancy, than any disease, derangement, or other disharmony of mind and body. He thinks that the people who suffer from this social disorder are gradually increasing. He intimates that our children are more or less braggarts, they brag of themselves and their houses and their parents, and, as a matter of fact, the parents do not do much to disabuse the young mind of its boastfulness.

Dr. Collins believes, too, that we as a nation hold aloof from other nations for pure self-satis-

faction and that we believe in our superiority and the superiority of our righteousness, institutions, and conduct. Consequently, even if we have left childhood behind us we continue to develop our egotistic and youthful ideas after we have grown up. Most of us are emotionally infantile, and a great majority of us remain so throughout our entire adult life; that is, we are emotional and infantile in our response to the demands and obligations of life. We think as children and remain childish in our ideas. This infantilism may be physical, intellectual, or on the executive side of life, but it is due to a lack of development. Body infantilism is very easily appreciated from the number of dwarfs, pygmies, and midgets. Arrested intellectual development is equally obvious, and the man who has not kept his mental faculties in pace with his age is usually looked upon as a moron.

We probably overlook a number of these individuals until the time comes to study them either from the physician's point of view or the biologist's point of view, or from the trained psychological expert's ideas. Then their infirmity becomes quite manifest. Many of these people are not aware of their handicap, and they go through life with all sorts of misfortunes, almost unknowingly, because they have no outlook on account of the circle which limits their perspective. Dr. Collins thinks that we are adult infants and that we enjoy it. Doubtless the majority of people do. And like children we do not like to carry a thing to its logical conclusion; we do not like to think connectedly or protractedly, and sometimes we do not like to think at all. We like to have other people do our thinking for us, and we leave most of our ideas to our politicians, aldermen, legislators, priests, and newspaper editors. We all enjoy the life of a noon-day club, but from the same emotional maldevelopment,—a mild form of entertainment suitable for a child, but adopted by the man.

The author calls attention to the fact that children are notoriously gregarious, that they shun solitude; consequently, in adult life we graduate from the barn club to the business club and the college club. But we are all playing the same game although we think we are more dignified. There are many men who carry their office masks to the golf links and there suddenly drop them and become boisterous and garrulously gay when they are away from home. And one recalls, of course, the football game when the apparently dignified elderly gentleman gets up and makes an ass of himself, cheering, yelling, and throwing his hat and going through all sorts of perform-

ances. The foreigners who come to this country are apt to criticize us, but the same spirit prevails in all countries as in America.

Dr. Collins feels that when we Americans go abroad we put on a good deal of "dog," but we are trivial in our conversation, we herd together, and our thoughts are largely superficial. We are quite like the little girl in the book called "Gentlemen Prefer Blondes." We skim the surface of things, get what we think we can out of them, and come home and relate much more than we saw. The author thinks that "one of the reasons this country had a Washington and a Lee, a Franklin and a Lincoln, an Emerson and a Thoreau, a Poe and a Whitman, a Vanderbilt and a Vail, is that they were not brought up in hothouses; they were not swaddled in silks and furs. Their colds did not cause parent-panics, and their bilious attacks were not beyond the reach of sulphur and molasses. They were not rushed to the mountains or the sea when the sun grew hot, or to Florida when the days grew cold. They were allowed to meet the hazards of life, and made to rely in a measure on their own invention to surmount them. They had to face the problems which God or man, fate or accident, set them. But to-day we solve them for our children, and then we wonder or weep when our children cannot solve those problems which present themselves after they have flown from the nest, or are making ready to fly.

He says some other plain and truthful things, and he looks at the appalling side of matrimony which is disturbing the minds of many people, namely, the increasing frequency of divorce in this country. And he plainly says that more divorces spring from adult infantilism than from adultery. When a man realizes that he has married a doll he quickly tires of the companionship, as does the woman who has it brought home to her that her husband is a stuffed shirt, who whistles tunelessly while shaving, blows soap bubbles while bathing, becomes panicky when his temperature rises above 102°, and "won't play" unless he can be the leader! Jealousy, cruelty, alcoholism are not to be compared with adult infantilism as a wrecker of marriage. The present race of children among the well-to-do are being brought up with no real point in life. They drift up, they are coddled and pampered until they have no initiative, no soul, and no mind. Naturally they perish, either intellectually or physically.

Youth is dogmatic and tenacious of its opinions. It takes years of experience, of hard knocks and sound thinking, to reach the conclu-

sion that there is some good in all evil and some evil in every good. To children things, ideas, and persons are all one piece, good or bad. Tolerance is a virtue to which they have no access, and their opinions have the rigidity and stubbornness of the inexperienced. It is only in later years that resiliency of mind and indulgence of heart modify the sternness of their youthful judgments. Most of our views, political, religious, and others, are simply emotional attitudes, states of mind borrowed from someone else. It is not with amazement that we should look upon the world as it is at the present time, lacking in judgment, clearness or foresight, so devoid of thinkers, writers, but full of talkers who do not think. The remedy lies with the higher powers. We were handed something by our ancestors, and we fulfilled the contracts that they passed over to us.

NEWS ITEMS

Dr. F. A. Moore has moved from Lesterville, S. D., to Yankton, S. D.

Dr. H. J. O'Donnell has moved from Oldham, S. D., to Canova, S. D.

Dr. V. H. Moats, of Minneapolis, has located for practice in Birchwood, Wis.

Dr. E. L. Tuohy, of Duluth, has gone to Europe for study, and will spend two months in Paris.

Dr. L. M. Boyd, of Alexandria, is taking a short course of postgraduate work in New Orleans.

Dr. J. T. Bowers has been elected City Physician of Thief River Falls to succeed Dr. H. W. Froelich.

The Montana State Medical Association will hold its annual meeting in Billings on July 12, 13, and 14.

Dr. A. W. Hilger, of St. Paul, was married last month to Miss Winifred F. Stockwell, also of St. Paul.

Dr. Paul H. Rowe, of Minneapolis, who went to Vienna in May last, will sail for home on March 25 or April 3.

Dr. E. J. Tanquist, of Alexandria, has gone to New York City to take a postgraduate course in the New York Poly Clinic.

Dr. R. Schwyzer, of Blackduck, is behind a movement of the business men of that place to start a hospital in that city.

Dr. Henning F. Wiese, formerly with the Sivertsen Clinic of Minneapolis, has opened offices at 701 Physicians & Surgeons Bldg., Minneapolis.

Dr. William H. Sill, of White River, S. D., died last month at the age of 60. Dr. Sill was a graduate of Quebec and had practiced over twenty years in South Dakota.

Five nurses of St. Joseph's Hospital, Dickinson, N. D., died last month from some form of poisoning, possibly vapors from a varnish used on the wood-work of the building.

Dr. Charles E. Keene, who was director of hygiene and physical education in the Minneapolis schools, has been appointed lecturer on physical education in Harvard University.

Dr. A. R. Ellingson, a 1924 graduate of the University of Minnesota, has become associated with Dr. W. W. Will, of Bertha, who is also a University of Minnesota graduate, class of '05.

Drs. J. Arthur Myers and Harold F. Wahlquist, of Minneapolis, have become associated in practice under the firm name of Drs. Myers and Wahlquist, with offices at 730 LaSalle Building.

Dr. Robert B. Radl, of Hebron, N. D., was married last month to Miss Marie L. Rusche, of Minneapolis. Dr. Radl is a 1925 graduate of the Medical School of the University of Minnesota.

The directors of the Windom Hospital are considering the erection of a \$30,000 annex to the present building, which is too small to meet the needs of the city of Windom and neighboring country.

Dr. James Grassick, of Grand Forks, N. D., who has written eloquently, even in poetry, of the climate of North Dakota, has gone to California to spend the cool weather, soon expected in that state in March.

In two school districts of Rochester, Minn., nearly 500 children were immunized against scarlet fever. There were no severe reactions. A large part of all the children were treated later. The City paid the cost of the treatments.

Dr. W. E. G. Lancaster, of Abercrombie, N. D., has sold his practice to Dr. Andrew M. Thompson, lately located at Larimore, N. D. Dr. Lancaster is taking an extended course of postgraduate work at Toronto and Boston.

Dr. W. R. Ball, of Mitchell, S. D., president of the South Dakota State Medical Association, recently returned from a trip East studying medical matters. Last month he spoke at the Huron

Medical Society on "Periodical Medical Examinations."

Dr. B. J. Crumbie, father of the Minnesota Indian Health Service, who is doing a splendid work in this line for the Indians, recently gave the Indians in the hospital at Onigum a fine radio set, and the 67 patients in the hospital enjoy it very much.

Dr. E. F. Conynghame, of Underwood, died last month at the age of 70. Dr. Conynghame graduated from the Minneapolis College of Physicians in the class of '86. He had been an extensive traveller and served with the British forces in the Boer War.

The Martin County Medical Society has begun a series of monthly dinners at which medical subjects will be discussed. The first meeting was held last month at Fairmont, when Dr. H. P. Johnson, of Welcome, presented a paper on "Embolism of the Lungs."

Dr. Frederick C. Bailey, of Redfield, S. D., died last month at the age of 68. Dr. Bailey was a graduate from the Medical School of the University of Michigan, class of '83, and had practiced in Redfield for the past fifteen years. He had been in poor health for the past two or three years.

Dr. J. J. Seibel, of Lodi, Calif., a graduate of the University of Minnesota Medical School, class of '20, has opened the Reimche Memorial Hospital at Harvey, N. D. He purchased the building from Dr. Titzel, of Jamestown, and had the interior remodelled and redecorated, and he installed modern equipment.

Dr. Harley G. Bickford, of Balboa, Canal Zone, died last month at the age of 50. Dr. Bickford was a graduate of the University of Minnesota, College of Homeopathic Medicine and Surgery, class of '01, and practiced at one time in St. Paul. He had been in the Army Medical Service since the World War.

Dr. John J. Fulton, Jr., son of Dr. John F. Fulton, of St. Paul, a senior medical student at Harvard, has recently been awarded the Warren prize of \$500 for the best original research work done by any medical student in the world. The prize is awarded once in three years. Dr. Fulton, Jr., also won high honors at Oxford when a Rhodes scholar there.

The truth of the frequent statement that city-bred boys are healthier than country-bred boys has been confirmed by a survey of 5,000 students at the University of Minnesota made by Dr. H.

S. Dahl, director of the University Health Service and Dr. W. P. Shepard, Berkley, Calif., formerly of the University of Minnesota. The survey covered two years.

The Rush alumni of South Dakota are planning for a great meeting at Aberdeen on May 20, during the State Association meeting, and they want every South Dakota Rush man present. Dr. W. R. Ball, Rush '02, has engaged as the principal speaker Dr. Rollin T. Woodyatt, Professor of Clinical Medicine at Rush, who will speak on the "New Rush."

Dr. W. H. Long, of the Mayo Clinic, has become associated with the Dakota Clinic of Fargo, N. D. Dr. Long graduated from the Medical School of the University of Minnesota, class of '12, and has been working in the Mayo Clinic as an associate in the Department of Diagnosis and Internal Medicine. Dr. Long is a North Dakota man, his former home being Dickinson.

At the January meeting of the Lyon-Lincoln County Society, papers were presented by Dr. F. D. Gray, of Marshall, on "Surgical Cases Which Demand Immediate Operation," and by Dr. W. H. Valentine, of Tracy, on "Diseases of the Intestines." It was voted to have a course of post-graduate talks given by members of the Mayo Clinic and the University of Minnesota Medical School.

For some months past the Minnesota State Medical Association, co-operating with County Societies, has been giving radio talks from Station WCCO on health topics. The names of the speakers (physicians) who give these talks are not announced. Dr. F. M. Briggs, of Duluth, has been given a like series of talks over Station WEBC, of Superior, Wis. Both stations will continue the work.

The Upper Mississippi Medical Society held its annual meeting at Brainerd last month. Dr. Berglund, of the Medical School of the University of Minnesota, and Dr. E. L. Tuohy, of Duluth, were guests of honor and presented papers. Officers were elected as follows: President, Dr. B. A. Smith, Crosby; vice-president, Dr. R. F. McHugh, Aitkin; secretary, Dr. G. J. Badeaux, Brainerd.

Dr. Grassick's history of North Dakota Medicine, published by the North Dakota Medical Association, is now ready for distribution. It is a noble gift by Dr. Grassick to the profession and is "dedicated to the wives of the pioneer physicians of North Dakota." It makes a volume of nearly 400 pages, and copies of it can be had, postpaid, for \$3.50. It will be noticed in an early issue of THE JOURNAL-LANCET.

Dr. Ralph E. Leigh, who took the two-year medical course of the University of North Dakota and two years in the Medical School of the University of Minnesota, followed by internship work in Ancker Hospital of St. Paul and in the Kings County Hospital of Brooklyn, N. Y., has joined the Witherstine and Miller Clinic of Grand Forks, N. D. He is a son of Dr. H. J. Leigh, formerly of Tower City, N. D., but has been practicing in Lakefield, Minn., for some years.

At the January (27th) meeting of the Cass County (N. D.) Medical Society, Dr. J. P. Aylen requested that the names of all medical men who served in the World War be forwarded to him or to the secretary (Dr. L. J. Evans, Fargo). Dr. E. M. Hammes, of St. Paul read a paper on "Spontaneous Meningeal Hemorrhage," covering the literature of the subject and giving a report of several cases treated by himself. Several members of the Society discussed the subject.

The Huron (S. D.) District Medical Society had an excellent monthly meeting in February. In addition to his talk, noticed elsewhere, Dr. Ball spoke enthusiastically of the forthcoming annual meeting of the State Association. The regular program consisted of talks on "Ectopic Pregnancy, with a Case-Report," by Dr. R. A. Buchanan; on "Rickets," by Dr. E. B. Taylor; and on the "Medical Treatment of Peptic Ulcer," by Dr. W. H. Saxtoon. Officers for the current year were elected as follows: President, Dr. R. A. Buchanan; vice-president, Dr. H. L. Saylor; secretary-treasurer, Dr. Grattan FitzGibbon.

The program of the next monthly meeting of the Staff of Lymanhurst Hospital, is as follows: "Roentgenologic Observations of Unusual Pulmonary Conditions," by Dr. Leo Rigler; "Some Considerations on the Prevention of Heart Disease," by M. H. Nathanson; "The Acoustics of the Bronchial Breath-Sounds and Its Application to the Phenomena of Auscultation as Heard in Lobar Pneumonia," by Dr. George Fahr; "Employment of Operations to Reduce Disability Rather Than to Postpone Death," by Dr. John L. Yates, of Milwaukee. The meeting will be held at Lymanhurst School, 1800 Chicago Ave., Minneapolis, at 7:00 P. M., March 23, and all physicians are invited to attend.

Dr. R. D. Alway and his son, Dr. J. D. Alway, of Aberdeen, S. D., have moved into handsome and spacious offices fully fitted up for their work on the ground floor of a prominent business block in that city, at the corner of Fourth Ave. and Lincoln St. Dr. R. D. Alway is well known to our readers as a specialist in eye, ear, nose, and throat work and as a leader in professional

circles in the state, especially as secretary of the South Dakota State Medical Association for a number of years. Dr. J. D. ("Douglas," as he is called "for short") took his B. A. and B. S. degrees from the South Dakota University and his medical degree from Rush (class of '23), after which he took nearly three years of internship work in Wesley Memorial Hospital of Chicago and at the University Hospital at Iowa City under Dr. Lee Wallace Dean.

Alpine Sun Lamp for Sale

Just like a new lamp. Used only a few hours as a demonstrator. Direct current. Will sell cheap. Address 110, care of this office.

X-Ray Apparatus for Sale

A "Snook" X-Ray apparatus for 220 volts, direct current, is offered for sale at a very reasonable price. Address 121, care of this office.

An Assistant Physician Wanted

In general practice in a good town near the Twin Cities; one whose inclination is toward internal medicine. Address 125, care of this office.

Wanted

In a small sanatorium a nurse capable and competent in Physiotherapy, X-Ray, and Laboratory work. Salary, \$100 a month and maintenance. Address 128, care of this office.

Practice for Sale

\$500 buys unopposed \$6,000 cash practice in a Minnesota town of 800 with large unopposed territory. Equipment included. Joining group. Address 118, care of this office.

South Dakota Practice for Sale

An old well-established practice. Averages \$7,000 a year. No competition. Richest farming district in State. Compelled to leave on account of wife's health. Address 130, care of this office.

Position in Minneapolis Wanted

By thoroughly trained and experienced young woman in office, laboratory, and x-ray work with two years training in nursing. Best of references to former employer. Address 129, care of this office.

Locum Tenens Wanted

A substitute for nine months is wanted in a firm of two physicians the younger of whom is to do post-graduate work. In a Minnesota town of 1,000. Salary will be paid. Address 131, care of this office.

Assistant Wanted

At once. Must be graduate of Class A school. Good hospital connections in a good town in North Dakota. Good opening for right man. Partnership later. Nothing to buy. Address 116, care of this office.

Physician Wanted

A physician who desires to associate himself with dentist, in Minneapolis. Fine location; new building. No other physician on the Avenue. Call Hyland 0262; after office hours, Colfax 4247; or address 124, care of this office.

Practice for Sale

A \$5,000.00 practice in best dairy belt of Wisconsin. Nearest competition 10 miles. Best roads and schools. Must be sold at once. Am retiring. No bonus; charges only for drugs and furniture. Address 123, care of this office.

Practice and Hospital Equipment for Sale

Having decided to move to a university city, I offer my \$20,000 practice and hospital equipment for sale or exchange for real estate. It requires a physician who can do his own surgery to handle the practice. Address 117, care of this office.

Offer to Share Office in Minneapolis

A dentist desires a physician to share his office in South Minneapolis. Best corner on Lake Street. New building. The dentist has been in same location for seven years. Would like a physician of same length of experience. Address 122, care of this office.

Practice for Sale

In Southeastern South Dakota; \$5,000.00 to \$7,000.00 unopposed cash practice; business can be greatly increased by doing your own surgery; large territory; money maker from start; I have made good; specializing; practice goes to purchaser of my combined office residence; terms easy. Address 127, care of this office.

Position in Physician's Office Wanted

By a young woman who can do office work thoroughly—stenography, dictaphone work, book-keeping, etc. Has had two years and a half in a physician's office and three years in a bank. Capable as secretary or all-round office work. Lives at home and will accept moderate salary. Best of references. Address 120, care of this office.

Dentist Wanted

A whole-time dentist at the North Dakota State Hospital. Salary \$150 per month and full maintenance. Must be an unmarried man, of good moral character, and able to do X-Ray work. Should be registered in the State. Unmounted photograph and full references required in first letter. Address Dr. A. W. Guest, Supt., Jamestown, N. D.

Physician Wanted in Minnesota Village

The village of Gully, Minn., and vicinity wish to advise that after February 1, 1926, they will be interested in securing the location here of a doctor, as the man practicing here now is leaving after that date.

The opening here is an exceptionally good one, and the location has already proven itself from an earning standpoint which can be substantiated by the former doctor.

Gully is located in the eastern part of Polk County, Minn., is a small village with a large and prosperous farming territory surrounding it. It is located in the midst of one of the best dairying sections in the state.

The location gives the doctor who locates here a territory on three sides of its village of twenty miles north, west, and south and nine miles east to its nearest town where another doctor is located. Address Drawer B., Gully, Minn.

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MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART I

By J. ARTHUR MYERS, PH.D., M.D.

Medical Director, Lymanhurst School and Hospital for Tuberculous Children; Chief of Tuberculosis, Minneapolis General Hospital; Assistant Professor of Preventive Medicine, University of Minnesota; Etc.

MINNEAPOLIS, MINNESOTA

[The death-rate from tuberculosis in this country has shown a marvelous decrease. In 1832 it was 450 per 100,000 of population in the cities of New York, Philadelphia, and Boston. In 1925 in the registration area of this country it was 100 per 100,000; and, moreover, it has been clearly demonstrated that this rate can be largely decreased, and it can be done in three ways: by good diagnostic work, good therapeutic work, and good preventive work. In the last analysis these three good works depend largely upon the general practitioner, who, alone, sees most of the patients at the time, that is, early, when these good works must begin if the best results are to be obtained. In this way it is believed that the present rate can be reduced in five or six years to 50 per 100,000.

In order to render the work of the general practitioner more effective, THE JOURNAL-LANCET has asked Dr. J. A. Myers to place before our readers, by means of a series of papers, what the advanced students of tuberculosis, at home and abroad, have learned of the subject and, more specifically, what forms of treatment are now accepted by these students.

Dr. Myers' qualifications for this work are manifest in what he has done and the position he holds. He is Assistant Professor of Preventive Medicine in the Medical and Graduate Schools of the University of Minnesota; Medical Director of the Lymanhurst School and Hospital for Tuberculous Children (a unique institution conducted by the Board of Education of Minneapolis, in which 150 or more tuberculous children are in daily attendance); Consultant in Tuberculosis of the Glen Lake Tuberculosis Sanatorium (one of the largest in America; Etc.

We shall also publish during the year a few of the extremely able papers presented before the Staff of the Lymanhurst Hospital by distinguished men in this work during the year.—THE EDITOR.]

I. HISTORY OF THE NATURE AND CAUSE OF TUBERCULOSIS

A TERRIBLY EMACIATING AND HIGHLY FATAL DISEASE

Among the ancient writers no clearer descriptions of tuberculosis have been brought to our attention than those of Hippocrates, a Greek physician who lived from 460 to 376 B. C. So clear were his descriptions that even to-day the physician cannot mistake the pictures which he painted. However, he describes persons only in far advanced and hopeless conditions. In all probability this was the only stage of the disease which he recognized. Seeing patients greatly emaciated and slowly wasting away he ascribed to this disease the names *phthisis* and *consumption*,—names which had no rivals for more than twenty centuries. He believed that *phthisis* was due to discharges from the pharynx entering the lungs through the trachea and becoming stagnant, to unresolved pneumonia, to empyema, and to blood-spitting; indeed, under the head of *phthisis* he included empyema, lung abscess, and gangrene. It was left for Areteus to differentiate between *phthisis* and empyema.

In those ancient days absurd ideas were extant regarding the cause and nature of consumption. Many believed that this disease was caused by some strange ferment. Some thought that it was caused by a sharp corroding humor falling

from the brain upon the lungs. Others believed that it was due to a vicious disposition of the body juices.

A COMMUNICABLE DISEASE

Isocrates, living at about the same time as Hippocrates, expressed the belief that phthisis was contagious.

Over the horizon just behind Hippocrates and Isocrates trailed Galen, one of the greatest physicians of all time. Galen, who lived from 131 to 201 A. D., was an anatomist of great renown. Among the many other subjects in which Galen manifested great interest was consumption, or phthisis. To his mind it was due to ulcerations and was caused from rupture and hemorrhage, from strain and inflammation, and from direct injury. Galen's observations convinced him that consumption was contagious, for he said: "It is dangerous to live with consumptives and with those whose foul breath imparts a heavy odor to the rooms in which they lie." It is fortunate that Galen recognized and taught that consumption was a communicable disease since his writings and teachings were recognized as supreme authority for more than fifteen hundred years.

AN HEREDITARY DISEASE

Probably because he observed that many persons in the same family died of this disease Celsus taught that phthisis was an hereditary disease. This view became so implanted in the human mind that it was accepted for centuries. Even to-day the physician has great difficulty in convincing the public that tuberculosis is not generally hereditary.

CESSATION OF PROGRESS

When one considers the facilities with which the ancient physicians had to work, one marvels at their accomplishments, brought about largely through keen powers of observation. Had medical and scientific progress continued as it started the world might well be several centuries further advanced in these fields to-day. If so, possibly some of our most fatal diseases would have only an historical interest at present. Unfortunately, just as much was being added to the total of human knowledge scientific study began to decline and was transferred from a Greek to a Roman center.

THE DARK AGES

Soon after the first period of Medieval History the Dark Ages settled down upon Europe. Inquiry into nature ceased, and there developed a spirit which was even hostile to observation and study. "Mystical explanations were invented

for natural phenomena, while metaphysical speculation became the dominant form of mental activity." It was during this time that authority was declared the source of knowledge even to the extent that it resulted in a complete eclipse of reason. Among amusing illustrations Locy points out the following: "In the Middle Ages the question of the number of teeth in the horse was debated with great heat in many contentious writings. Apparently none of the contestants thought of the simple expedient of counting them, but tried only to sustain their position by reference to authority." It was through this period that the writings and teachings of Galen constituted the highest authority in medicine. He who attempted to advance knowledge did so at the risk of losing his life. Consequently, after Galen's work nothing new was added to human knowledge concerning tuberculosis for more than fifteen hundred years.

THE AGE OF REVIVAL

While the world was in darkness, however, there appeared over the horizon a beam of light. It proved to be the age of revival, which began with the opening of the eleventh century and continued until the discovery of America. It was particularly during the last century of this period—often referred to as the *Renaissance* (new birth)—that a great change came about which greatly stirred the minds of the people and "awakened them as from a sleep."

Although a general revival of learning had been initiated, it was not until the seventeenth century that a true renaissance of medicine occurred. Soon after Vesalius (1514-1564) had broken down ancient authority in anatomy and had reformed the teaching of this subject and Harvey (1578-1667) described the circulation of the blood, Franciscus Sylvius (1614-1672) made some notable contributions to medical sciences. Indeed he made the first advance in our knowledge of consumption since the ancient writers.

TUBERCLES DESCRIBED

Sylvius observed that tubercles often are seen in the lungs of consumptives and that these tubercles are capable of undergoing softening and suppuration. However, he did not have the right conception of tubercles since he believed they were glands in the lungs which, under ordinary conditions, are invisible because of their minuteness. It is evident, therefore, that to Sylvius the tubercle possessed no specific pathological significance. Otherwise Sylvius regarded consumption very much the same as did his predecessors.

PREVALENCE OF CONSUMPTION

Richard Norton (1635-1698) wrote a book entitled "Phthisiologia" in which he advanced certain new views concerning consumption. He believed that the formation of tubercles represented the first stage in the development of phthisis. In the following sentence he expressed his views as regards the prevalence of consumption: "When I consider with myself how often in one year there is cause enough ministered for producing these swellings, even to those who are wont to observe the strictest rules of living, I cannot sufficiently advise that anyone, at least after he comes to the flower of his youth, can die without a touch of consumption." Rokitsky (1804-1878), who is said to have made 30,000 post-mortem examinations, was convinced that 90 per cent of those who had not died of tuberculosis had healed tuberculous lesions in their lungs.

CONSUMPTION CURED SPONTANEOUSLY

Norton was of the opinion that tubercles may heal and disappear spontaneously. The views expressed in the following quotation have been scientifically confirmed many times since and have done much to instill hope into tuberculosis sufferers and workers:

"And without doubt the breeding of these swellings is so frequent and common that a consumption of the lungs would necessarily be the common plague of mankind if these swellings did not vanish, or were removed by art, as easily as they are bred at first; and, indeed, I have been used to think, not without reason, that as the more benign tubercles are wont to go off of their own accord, and that quickly, so none of them lay the foundation of the great disease of which I am treating, but only those which are in some degree malignant and ill-natured and that are wont to putrefy sooner or later from some peculiar quality of their nature."

In discussing scrofula, already known as the King's evil, Norton declared that it was the easiest form of phthisis to cure and that in his experience it was the form which occurred most frequently.

MILIARY AND FIBROID DISEASE

From their descriptions we believe certain of the earlier physicians were dealing with cases of miliary disease. However, they apparently did not understand them. Sylvius, Willis, Bonetus, Mangetus, Pierre Desault, Stark, and others offer fairly clear descriptions of a miliary condition. The word *miliary* was first used by Bayle (1774-1816). Quite clear descriptions were given

of chronic fibroid cases of tuberculosis by several of the earlier writers. Willis, for example, in his "De Phthisi Pulmonari," calls attention to the fact that the sides of ulcers or cavities become callous so their contents are expectorated in large quantities every morning, and they "frequently arrive to old age." He calls attention to persons who have had consumption thirty or forty years but lived out their natural span of life.

DEFINITION OF PHTHISIS CHANGED

Prior to the time of Willis it was believed that all phthisis was a pining away of the whole body arising from an ulcer in the lung. Willis (1621-1675) showed that there may be other causes of the wasting of the body and states that "Phthisis is better defined as a withering away of the whole body arising from an ill formation of the lungs."

During all this time the views of the ancients covering such subjects as contagion and heredity had remained unchanged. Indeed Morgagni (1682-1771) was so afraid of consumption that he preferred not to dissect the bodies of those dying of this disease. Although the cause was not known, keen observation had proved the dangers of the disease. In the light of our more scientific yet incomplete knowledge of consumption the early views regarding its contagious nature for the most part have been confirmed. Unlike many of his predecessors and contemporaries, Willis believed that consumption is not directly inherited but that there may exist an "innate debility" making it more likely for one individual to acquire tuberculosis than another.

A NEW THEORY OF CONSUMPTION

As early as 1720 Benjamin Martin published a very remarkable book pertaining to consumption, remarkable because he expressed views concerning the nature and cause of consumption which correspond quite closely to our present-day knowledge. He says: "The original and essential cause, then * * * may possibly be some certain species of animalcula or wonderfully minute living creatures that by their peculiar shape or disagreeable parts are inimicable to our nature, but, however, capable of subsisting in our juices and vessels, and which * * * may, by their spontaneous motion and injurious parts, stimulating and perhaps wounding or gnawing the tender vessels of the lungs, cause all the disorders that have been mentioned."

THE DISCOVERY OF PERCUSSION

Not until 1751 do we have any record of immediate percussion being used in the diagnosis

of the disease. At that time Auenbrugger made invaluable observations which he incorporated in a small book. He pointed out that the chest of a healthy subject sounds like a cloth-covered drum when struck, but that the sound is muffled or higher in pitch when an area of disease underlies the area struck. Although Auenbrugger's discovery was not much appreciated by many of his contemporaries and remained unnoticed for a long time, it was revived one year before his death, in 1809, by Corvisart. Since that time percussion has taken a prominent place in the diagnosis of lung disease.

TUBERCULOUS DIATHESIS OR DISPOSITION

Bayle (1774-1816) observed that in some cases tubercles appeared simultaneously in various organs of the body. He explained this occurrence as due to a common cause. He believed this dissemination to be due to a tendency to the production of tubercles. This which he called a tuberculous diathesis or disposition was considered the common cause of tuberculous phthisis. This explanation seemed so logical that it deeply impressed physicians interested especially in tuberculosis.

DOCTRINE OF THE UNITY OF PHTHISIS

Following Bayle's work considerable haziness developed around the relations existing between tubercles and phthisis. Then Laennec (1781-1826) came forth with the view that all phthisis is tuberculous. Laennec called attention to the fact that all scrofulous glands are tuberculous. He pointed out also that contrary to the views of the ancients hemoptysis is never the cause of phthisis, but is always the result of disease previously established.

Bichat founded the science of histology, and because of his untimely death from tuberculosis at the age of thirty years it is believed that microscopic pathology lost much by his death. However, Virchow (1821-1903) extended especially the pathological work which Bichat had begun. Although naked-eye descriptions of tubercles had been quite accurately made it was only with the aid of the microscope that the details of these formations could be studied. Moreover, it was only this instrument which could later bring within range of human vision the true cause of tuberculosis.

THE DISCOVERY OF THE STETHOSCOPE

Among the greatest clinicians of all times was the discoverer of the stethoscope, Laennec (1781-1826). Suffering from tuberculosis himself, one day he rolled pieces of paper into the form of

a cylinder, and applied one end of the cylinder to the surface of a living chest and the other end to one of his ears. Thus we have the first record of sounds being transmitted clearly and sharply from within the human chest to the examiner's ear. Laennec was an anatomist and an expert pathologist, and was therefore well qualified to interpret the sounds which came from the chests of patients to his ears. So keen were his observations and interpretations that his teachings have remained almost unchanged. Most of what we know now about lung sounds may be traced to the teachings of Laennec. The chaotic condition of knowledge pertaining to lung diseases was rolled away, and in its path Laennec left much well-organized knowledge; indeed, he was the first to describe and differentiate such conditions as pneumothorax, gangrene of the lung, emphysema of the lung, and bronchiectasis. Bronchitis and pneumonia he described in a masterly way. It was Laennec who discovered the "anatomic tubercle" and who coined the terms *pectorilology*, *egophony*, as well as *sibilant* and *sonorous râles*. Of Laennec's book "*Traite de l'auscultation mediate*" Garrison says: "It is the foundation stone of modern knowledge of diseases of the chest and their diagnosis by mediate exploration." Although the stethoscope has been greatly elaborated from the paper cylinder to its present electrical forms the principle of eliciting sounds from within the chest remains the same.

BEGINNING OF EXPERIMENTATION

In 1843 Klenke took some material from a tuberculous person and injected it into the veins of rabbits. These experimental animals developed tuberculosis. Klenke then proved that tuberculosis may be transmitted through milk.

In 1865 Villemin published the results of his experimental work on tuberculosis. He had been able to confirm the work of Klenke and even more, in that he had inoculated guinea-pigs and rabbits with caseous material and sputum, and thus produced tuberculosis in these animals. He was so convinced of the contagiousness of tuberculosis that in 1870 he said: "The phthisical soldier is to his messmate what the glandered horse is to its yoke-fellow." Villemin's contribution to our knowledge of tuberculosis remains even to-day among the most valuable of all times.

It was in 1877 that Cohnheim not only repeated the experiments of Klenke and Villemin but went one step further by injecting tuberculous material into the anterior chamber of the rabbit's eye, through the clear cornea, where he could demonstrate to his own satisfaction and to his friends the daily development of tubercles.

SPONTANEOUS GENERATION AND THE GERM THEORY

Although the theory of spontaneous generation was generally accepted, Pasteur (1822-1895) proved beyond all doubt that it had no scientific basis, but that all life comes from previously existing life. So scientific and convincing were Pasteur's demonstration that all of the numerous subsequent attempts to revive the theory of spontaneous generation have failed utterly.

Although bacteria were discovered by Leeuwenhauk in 1687, no detailed studies could be made because of the imperfect development of the microscope. Perhaps for the same reason the idea then extant that contagious diseases are due to microscopic forms of life, did not live long. Indeed, it was not until 1837 that Bassi found a disease among silk worms that was the result of passing minute particles from the sick to the healthy, and in 1840 Henle brought forth the belief that communicable diseases are due to germs. In 1857 Buhl stated that generalized miliary tuberculosis is due to an infection originating from a tuberculous focus in the lung or lymph node or some other part of the body. Scientific proof of these beliefs, however, had to await the experimental work of Pasteur and Koch, in 1877.

THE DISCOVERY OF THE TUBERCLE BACILLUS

The microscope having been perfected and the contagious nature of the disease having been proved experimentally, a considerable knowledge of dyes and culture media having accrued, and a scientific spirit prevailing in many places, the "stage was properly set" for one of the great discoveries in tuberculosis. Robert Koch (1843-1910), a country practitioner, had become interested in the scientific aspect of his work. This interest, together with his enthusiasm and his clinical experience, prepared him unusually well for scientific production. After a long period of brain-racking toil Koch announced to the world, in 1882, that he had discovered a small germ to be the cause of tuberculosis. This germ he designated *tubercle bacillus*. In the course of his work Koch established the following four postulates which are necessary to show that a particular organism is the cause of a given disease; first, that the particular organism should be found in great abundance in the tissues and blood of the suspected animal; second, that a pure culture should be obtained of this particular organism; third, that this pure culture would pro-

duce the disease when introduced into the body of another animal; fourth, that the tissues and blood of that animal would reveal the particular organism in question. In his study of tuberculosis Koch employed these four postulates: first, he found in animals and human beings the organism which he believed to be the true cause of tuberculosis; second, he made pure cultures of these organisms; third, he injected the pure cultures into well animals (217 in all), every one of which developed tuberculosis; fourth, from these animals he was able to recover the germs which he designated *tubercle bacilli*.

Koch's splendid work in tuberculosis paved the way for wonderful discoveries in the etiology of other diseases some of which he himself brought about, such as Asiatic cholera. The discovery of the tubercle bacillus dispelled all doubt concerning such questions as the contagious nature of tuberculosis.

TUBERCULIN

The discovery of the tubercle bacillus did not end Koch's interest in this germ; indeed, he continued to study it from various points of view and in 1890 introduced tuberculin. Although it did not prove to be the cure for tuberculosis that Koch anticipated, it has been found of real value in the diagnosis of certain cases when employed by those who know its dangers, as well as its uses.

DISCOVERY OF THE X-RAY

In 1895 Roentgen discovered the x -rays, which have proved to be very valuable in the diagnosis of lung diseases. In determining the extent of disease the x -ray findings are very helpful, so much so in fact that our present classification of pulmonary tuberculosis is based in part upon them. In tuberculosis of other parts of the body, particularly of the bones, joints, and the gastrointestinal tract, x -ray findings have rendered a great service to diagnosis.

With the methods of inspection, palpation, and percussion in use; with the microscope, stethoscope, and the x -ray discovered and elaborated; with a knowledge of the anatomy and pathology of the tissues and organs which tuberculosis attacks; with general encouragement of the splendid spirit of investigation extant, much has been done in the last quarter of a century to further our knowledge of tuberculosis. Much remains to be done.

[To be continued.]

PREGNANCY WITH COMPLICATIONS

BY DANIEL H. BESSESEN, M.D.

MINNEAPOLIS, MINNESOTA

CHRONIC MYOCARDITIS; POSTMATURITY; LOW
FORCEPS; EPISIOTOMY

The patient, aged 31, primipara, secundigravida, presented herself at seven and a half months pregnancy with a pulse rate of 130-150. She gave a history of a previous similar attack of cardiac distress at the age of sixteen. The abdomen was large with the pregnant uterus, and there was dyspnea, but the patient was not otherwise greatly handicapped. By the active use of digitalis, the heart rate was nicely controlled, and the patient carried to two weeks beyond maturity, the mother failing to enter labor at the usual time. When, during labor, the head had reached the pelvic floor with complete dilatation, forceps was applied in an effort to save the mother's strength as much as possible. Small Simpson forceps was first tried, but would not hold. The regular Simpson forceps was then applied, but even with this, the shanks could not be approximated. In this awkward fashion, with the handles of the instruments about two inches separated at their proximal ends, the head was brought fairly out onto the perineum, when it was observed that the head could not pass without a tear. A left lateral episiotomy was made and the child delivered. The child's head was found to be overly developed, of normal size, but with the fontanelles and fissures fairly well closed and the cranial vault well solidified.

Presence of cardiac lesions in pregnancy is made worse by the pressure of the uterus against the diaphragm. Control of these lesions depends upon the state of myocardial disease. Valvular disease is perhaps less to be dreaded than a myocardial injury, the extent of which is even under non-pregnant conditions difficult to estimate.

Postmaturity is of not much significance as a rule. When it has permitted, as in this case, a too well developed head it may cause further trouble in delivery owing to the inability of the head to mould itself to the maternal passage. In this case it necessitated an episiotomy.

The head of the child not only failed to mould to the pelvis, but the blades of the forceps apparently did not affect the shape of the head in the least. A delivery without forceps in this case would unquestionably have been much delayed. Puerperium was uneventful.

LOCKED TWINS; TRANSVERSE PRESENTATION;
CESAREAN SECTION

This patient, aged 39, secundipara, multigravida, gave a history showing no tendency toward previous illnesses in a familial, occupational, or social way; but the first child, born five years previously, was born dead following a very severe and difficult breech extraction. Her



Sketch by Jean E. Hirsch—adapted from Bumm.

physical examination revealed a well developed, well nourished woman of sound organic structure with normal measurements. Careful survey was kept during gestation, during which time the blood pressure was 130-145/75-85, and the urinalyses were constantly without evidence of dis-

ease. The patient suffered false labor three weeks before being due and entered and then left the hospital. Labor commenced one week following maturity which continued on and off without any very severe pains for one day; then very sharp and severe pains came for twenty-four hours. Examinations at this time showed the cervix dilated to three fingers, with a foot in the pelvis and the buttock in the right groin and the head in the left upper abdomen, a normal fetal heart heard over the right hypochondrium. The child seemed to be sitting over the right inguinal ligament and the force of the pains caused the child to be forced out away from the mother rather than down through the pelvis. The patient had at this time been in labor for forty-eight hours. In the light of the previous delivery history and considering the length of the present labor with no hope for easing or accelerating the progress, an abdominal Cesarean section was deemed advisable.

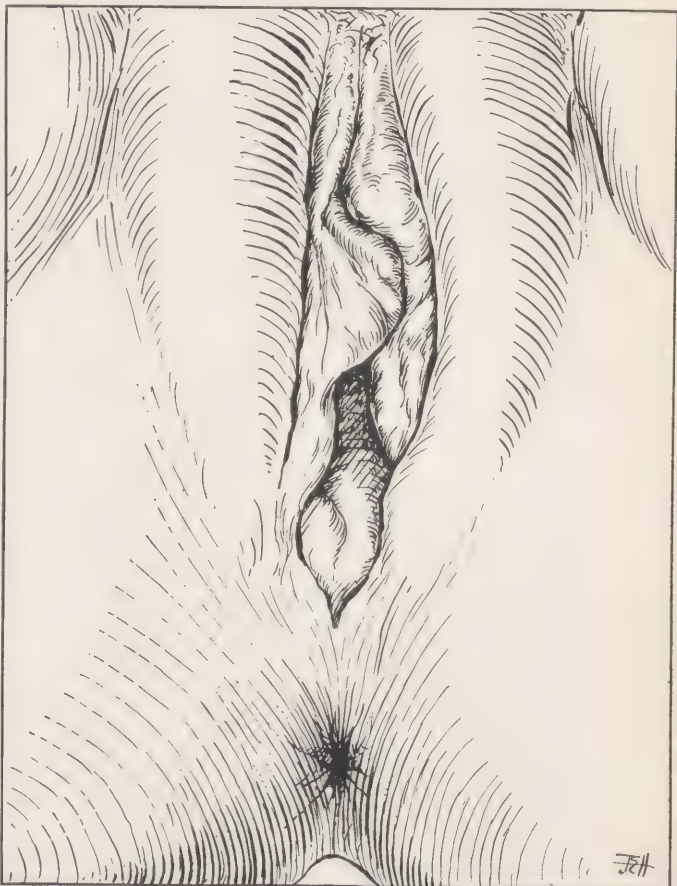
This was rapidly performed, and two well-formed babies, male, weighing seven pounds each, were removed. There was no appearance of life though the pulse of one was believed to have been obtained at delivery. Both amniotic sacs were filled with meconium, one child being cyanotic, the other pallid. The mother recovered nicely. At autopsy of the two infants, there were found organs apparently normal, with the lungs dark in color and heavy, congested, lacking crepitation. They were found to sink in water, and surface markings were present. There were no hemorrhages and no pink areas. A milky purulent fluid poured from the cut surfaces, and they were consolidated. The cause of death from the pathologic report of the pathological department of the University of Minnesota was antepartum pneumonia.

Twins occur roughly once in 70 to 80 labors. Fortunately, locking of twins is very seldom, and multiple children are frequently small. In this case, the multiplicity was not recognized. With the large bag of waters and the children closely apposed, the palpable parts were the head of the lower (posterior) child, its buttock in the right groin, and its foot in the pelvis. The estimated weight of the supposedly single large child was 14 pounds. They were so situated that their separation was not possible without outside interference. The diagnosis would have been much facilitated by x-ray study, and it is in cases of known difficult labors, or malposition that this procedure is especially advisable. However, the diagnosis of twins was not made until the actual opening of the uterus revealed the fact.

The transverse presentation in this case must have been favored by the presence of twins and the hydramnios. It is a more likely position with twins than with a single baby. In the light of postpartum knowledge, it is probable that only an earlier Cesarean section could have saved these babies.

HEMORRHOIDS; VARICOSE VEINS; LACERATION OF PERINEUM (OLD); MID-FORCEPS; SCOPOLAMIN-MORPHIIN NARCOSIS

The patient, aged 35, tertipara, quadrigravida, was seen at the third month with a negative history and physical examination except for the above-mentioned findings. She was seen regularly each month and suffered no other distress than that relating to the venous distensions in the lower



Sketch by Jean E. Hirsch, three months after delivery, shows the reduction of the hemorrhoids and gives an idea of the loss of pelvic support.

body and extremities. At delivery, scopolamin-morphin narcosis was instituted after the dosage recommended by Krebs and Wilson at the Barnes Hospital at St. Louis, Mo. The anesthesia was very successful, and the progress of labor was uneventful until bearing-down pains commenced with complete dilatation. At this time the lack

of pelvic support, initiated by the extreme tear of the perineum, which had not been properly repaired at previous deliveries, failed to rotate the head of the child. Forceps was applied, and the child was delivered without mishap. Puerperium was uneventful.

The presence of hemorrhoids and varicose veins in pregnancy does not as a rule necessitate interference of surgical nature unless of very severe form. It is quite customary to observe these pathologic entities disappear following delivery.

The old laceration in question in this case must have been very nearly a third degree variety when recent. The lack of resistance of the pelvic floor with failure of rotation of the head was very marked. If not repaired at the time of delivery, this lesion leads to the condition found at the time of this delivery. Other types of discomfort are noteworthy, especially vesicocele, rectocele and lack of support of the uterus. This last is not observed unless there is lengthening of the ligaments holding the uterus.

Much effort has been expended upon painless labor in the effort to perfect some type of anesthesia which will give relief to mothers in labor. The technic of scopolamin-morphin anesthesia as developed at the Barnes Hospital at St. Louis, Mo., is a decided advance in this direction. Careful study of their work cannot but lead to recognition of the benefits to be derived from the measures they recommend. The dangers of this type of anesthesia rest mainly with the initial dose, which contains morphin. It is this drug which usually asphyxiates the child by deadening the stimulus to breathe. Giving this first dose outside the danger zone of three hours before delivery eliminates much of this tendency. Careful dosage of scopolamin is necessary; but the lower maternal and infant mortality rates renders worthy of further study this advance in obstetric anesthesia. The chief objection is the increased attention demanded from the physician in charge, which with a busy practitioner with so many other engagements on his hands, is almost prohibitive.

NEPHRITIS OF PREGNANCY; PREMATURE LABOR;
VELEMENTOUS CORD; HIGH FORCEPS; CERVICAL
INCISIONS; EPISIOTOMY

The patient, a primipara, aged 22, appeared early in pregnancy with a history negative aside from pertussis and scarlatina. Gestation progressed smoothly until the middle of the sixth month at which time she ventured a dietary indiscretion in eating too much butter. There appeared a temporary albuminuria with a few casts, which

quickly subsided, leaving a normal urine. Labor began early in the afternoon of the 28th of May, 1923, six weeks premature. At 6:00 p. m. on that day, the fetal heart was observed to increase suddenly to 150-160 with violent activity on the part of the fetus, after which the heart rate slowed gradually until it was no longer heard and life was no longer felt. No pain or other distress was observed by the mother but a diagnosis of abruptio placenta was considered most feasible. She was rushed to the delivery room and made ready for immediate high forceps delivery. The cervix was hard and admitted one finger. It was not possible to dilate it to the biparietal diameter of the fetal head, so incisions were made into the cervix. Forceps was applied in the axis of the mother's pelvis, and a small baby boy was delivered, normally irritable with a normal heart. The cord and placenta, when expressed were found to be attached for the first seven inches by the umbilical vessels only, without any of the normal structures covering this portion of the cord. The cervix was sutured with 40-day chromic gut No. 2, and the episiotomy was repaired in two layers. The mother exhibited slight surgical shock, probably from loss of blood, from which she quickly recuperated. The patients left the hospital on the thirteenth day, the baby showing no difficulty in recovering the insufficient weight.

The work of Newburgh has associated nephritis with dietary etiology. This case bears out his conclusions, though he worked mainly with proteins. Nephritis in pregnancy is usually of the tubular type, where pregnancy has any part in its origin. There is, as a rule, little later apparent kidney injury, and such was the case in this patient.

With a possibility of abruptio placenta, as was considered in this case, the performance of Cesarean section is less shocking to the patient than accouchement forcé. This mother gave evidence of shock shortly following her delivery, the treatment for which was instituted before its clinical picture presented.

The velementous cord is a rather unusual embryological anomaly. It is quite probable that in this case the velementous cord kinked upon itself giving rise to the picture of rapid then slowing heart rate. The mother was confident that the child was dead, and the attendants felt likewise. It was a surprise to find the child apparently in excellent condition with no distress whatsoever.

In applying high forceps the blades are best applied in the axis of the mother's pelvis unless

there is sufficient room to allow for the fetal head. In this case they were applied diagonal to the fetal head and the child's features were slightly distorted as a result.

A hard cervix is impossible to dilate rapidly. These cases, as suggested by Durrhsen, require incision into the cervix which should always be made in the anterior or posterior lips, out of the way of the lateral where tearing might lead into the broad ligaments with resulting fatal hemorrhage. Incisions of this sort should be sutured at the time of delivery else they may cause later trouble. The episiotomy gives direction to a perineal tear and usually leaves a straight edged wound easy to suture.

BANDL'S RING; OCCIPUT POSTERIOR; CHIN ANTERIOR; PODALIC VERSION; EPISIOTOMY;
RESUSCITATION

The patient, aged 25, a primipara, was seen at three months pregnancy, with family, marital, occupational, and past histories negative. She was carefully followed each month, and her gestation was entirely normal. On commencement of labor the patient was sent to the hospital. When examined, at 4 P. M., dilatation was found to be complete, and the head was well down on the perineum with pains constant and moderately strong, so that it seemed she would be delivered within a half hour. An hour later the mother seemed to be tiring, though the position of the head was unchanged, and the fetal heart remained regular at 125-130. At 5:30 the fetal heart was observed to accelerate to 140-145, while a contraction ring appeared on the abdomen. Catheterization removed 100 c.c. of urine without affecting the contraction ring, and the fetal heart rose to 170. Slight bulging was observed as the patient was placed under anesthesia, and shortly the fetal heart was no longer heard. A midlateral posterior episiotomy incision was made, and forceps extraction attempted which failed to ease the occiput posterior chin anterior position of the child's head. Version was at once performed, and the child was delivered by breech extraction four minutes and thirty seconds after the fetal heart was last heard. The baby was pallid and limp and took its first breath after ten minutes of tubbing with hot and cold water. The episiotomy was repaired in anatomic layers, and the mother and child recovered.

Three months later the mother had a parotitis on the right side. It might be questioned as to whether the operative anesthesia with support to the angle of the mandible were not the cause

of this parotitis since it is known that these conditions in salivary glands are slow in onset.

The position of chin anterior is one which much delays labor under any conditions unless the child is small. The condition calls for interference to save the mother much unnecessary suffering. Where rotation of the head has partly begun, it is often impossible to apply forceps. Under these circumstances version is the procedure of choice.

A contraction ring forms from the extreme efforts of the uterus to empty itself. The retraction of the fundus precedes often the ability of the cervix to pass the head. Bandl's ring may be confused with a full bladder. Catheterization should be done, though Bandl's ring is usually oblique, while the bladder is transverse across the hypogastrium. The only course of treatment is immediate delivery to save the mother from the pain of these violent contractions with the danger of rupture of the uterus or severe laceration of the cervix.

The use of hot and cold water constitutes one of the most favorable means of resuscitating the exhausted child. The interference with the fetal circulation by the violent contractions which cause the contraction (Bandl's) ring often leads to intrauterine death of the child.

VALVULAR DISEASE; CHRONIC CARDIAC, MITRAL INSUFFICIENCY; SLIPPING RIGHT PATELLA; DISLOCATION RIGHT KNEE; THREATENED PREMATURE DELIVERY; ACUTE GASTRECTASIA; MANUAL DILATATION; HIGH FORCEPS

The patient, aged 30, gravida—4, para—2, presented herself for observation at six months pregnancy following a lateral dislocation of the right knee. She had suffered approximately six dislocations of the right patella during her life and frequent tonsillitis. There had been an abortion at two months a year previously, and the patient had a tendency to worry about trifles. Otherwise there was nothing in the family, marital, social, occupational, menstrual, or past histories which showed any tendency toward disease. Her last period had been January 19, 1925. On June 8, 1925, she attempted to do some work from the elevation of a chair, lost her balance, and fell heavily on her right side. The right leg was found at an angle of 145 degrees to the thigh. The heart presented a normal outline and position, but on auscultation there was found a mitral insufficiency. Reduction of the dislocation was achieved under ether anesthesia, and

the patient was placed in bed with the limb in a posterior splint. One week later she attempted to miscarry, a condition which was checked by the use of morphin and large doses of atropin, but in doing so developed an acute gastrectasia, probably partly due to the influence of the atropin. Stoppage of atropin and passage of the stomach tube permitted the patient to come through an extremely apprehensive two or three days in fairly good condition. The size of the uterus made sitting up in bed very difficult, and the condition of the right knee prevented walking or moving about in bed with any degree of comfort. Confinement continued until labor commenced on August 27, 1925.

Careful analyses during this confined gestation found the mother constantly in good condition. The pains started early in the morning and quickly established themselves until after twelve hours, they came at intervals of one to two minutes and lasted from one to three minutes. These extremely sharp, rapid severe pains lasted eighteen hours at which time the patient felt like bearing down. Rectal examination showed the head high in the pelvis with complete effacement, but no dilatation. The contradiction of the mother's pains to the condition of the uterus called for a vaginal examination which was done after careful preparation with every precaution for cleanliness. The baby was in fine condition, but the mother was rapidly tiring. This fact, together with the bearing-down pains, which obviously must lead to a contraction ring, made imperative an immediate delivery. Manual dilatation and high forceps on a floating head exhibited an eight pound boy in good condition. The mother passed through a stormy early puerperal convalescence for from four to five days with vomiting and nausea, which cleared with astonishing rapidity on administration of glucose by Murphy drip.

A slipping of the patella occurs for various reasons. Usually, however, there is a poor development of the tendons in which the patella is buried, and the leg may have an angle to the thigh which allows the muscles to draw the patella outward and lateral from its customary bed. They are usually of minor circumstance and this patient surmised that the accident which actually dislocated her knee was the same as the previous slipping but much more severe. A knee-cap worn at all times is quite advisable in slipping patella cases.

Treatment of dislocation of the knee has made various impressions on the minds of different authors. They do better, as far as permanent

solidity and freedom from pain are concerned, if fixed for approximately one year in a comfortable position of slight flexion. Most authors advise plaster casts, but these produce such marked atrophy of the limb that if possible it is perhaps better to place such an injury in a brace and administer massage two to seven times a week. Such massage keeps the limb in good muscular condition, and usually in its normal contour.

Valvular disease of any form is less to be dreaded than is a muscular lesion of the heart. Mitral insufficiency is by far the most frequent lesion the heart presents, and is so common in pregnancy as to be called by some the heart of pregnancy. There seems to be a close relation between valvular vegetations and tonsillitis, which leaves chronic cardiac pathology relative to the mitral valve especially. It must be considered in this case, inasmuch as she suffered frequent sore throat, preceding her present clinical observation.

This case presented a rather mystifying history as to the stage of gestation. The last period on January 19 would bring the baby due on October 26. The patient's history was corroborated by the measurement of the uterus which at the time of delivery was 27 cm. above the symphysis. It was somewhat of a surprise to deliver an 8 pound baby.

The action of atropin is to stimulate the smooth muscle in small doses and paralyze smooth muscle in large doses. The result of the action of large doses in this patient permitted dilatation of the stomach, a condition which, unless quickly recognized and treated is attended with a mortality of 75-82 per cent. The stomach tube is the one essential in its treatment. A duodenal tube may be passed and left in place for several days if necessary, but these patients are usually so desperate that they are unable to swallow the duodenal tube.

As mentioned before, the active pains of this mother necessitated an immediate delivery, because of her own condition. It seems peculiar that such active pains should be attended with such small measure of progress in a pelvis apparently without abnormality. However, the bracing of the right limb probably held so bound and rigid the channel of the birth canal, that the child had difficulty in entering it without outside aid. Both mother and child convalesced nicely.

ACUTE PYELONEPHRITIS; PREMATURE DELIVERY;
BREECH EXTRACTION; PUERPERAL SEPSIS

The patient, not quite 18, primipara, gave a history of conception immediately following mar-

riage. She had had no trouble during gestation up to the onset of the present illness and for that reason had not consulted any physician. When first seen, the patient had had a fever of 104° for three days. On that day, by forcing fluids, giving hexamethylenamine and acids together with intravenous injections of acriflavin, the fever dropped to 101° . On that same morning, the cervix was found to be dilated two fingers. She was admitted to the hospital where this same treatment was continued together with morphin and atropin to check the uterine contractions. The progress of labor was too far advanced, however, to stop, and a child 5 weeks premature, weighing 4 lbs. 4 oz. was removed by breech extraction from a frank breech presentation. The temperature following delivery was normal for two days at the end of which time it shot up again to 103° and the patient developed a puerperal sepsis in the form of a parametritis, which localized mainly over the left side in the region of the false pelvis. The white blood count which had ranged around 15,000 to 17,000 became 32,000. The lochia was extremely foul, indicative of a putrid endometritis. Active treatment of this condition by means of large hot vaginal douches five times daily with heat and ice to the pelvic region and sedatives to reduce fever and pain quickly reduced the infection. The patient left the hospital in fairly good condition with a baby gaining nicely, on the 21st day.

Acute pyelonephritis is a very critical condition for a pregnant woman. It is believed to be secondary to infection in some other part of the body or previous similar infection. It usually injures the kidney involved and future pregnancies cause further damage of the same sort, unless before such pregnancies take place the nephritic infection clears up. In this case, the infection was so acute and the pain so violent with little early urinary findings that a perinephritic

abscess was suspected until further examination clarified the diagnosis.

Premature delivery is the usual concomitant of a severe infection when associated with pregnancy. Especially is this the case when the kidney is the organ involved. This mother was seven months three weeks pregnant when delivered.

The position of frank breech makes any delivery difficult. In this case, the size of the child favored the extraction which was attended with no difficulty whatsoever.

Puerperal infection, as indicated by a rise of temperature to 100 degrees on any two days from the second to the eighth post partum occurs in from 10 to 20 per cent of normal labors, and is much more common following criminal abortion. It constitutes perhaps the most serious and the most common of all complications in the puerperium, totaling very nearly the sum of all other puerperal complications. Here there was observed a transfer of the infection from the left kidney, ureter and bladder to the pelvic organs. By early recognition and prompt treatment, the patient was saved from what otherwise might have proven a longstanding, vitiating pelvic infection. The noteworthy points are the very disagreeable odor of the lochia, the treacherous temperature, high white count, and extreme toxicity of the patient which much exceeds that of pyelonephritis alone.

The use of local treatment is becoming more and more obsolete. The function of vaginal douches could only serve the purpose of Bier's hyperemia and this probably could be equally well achieved by external heat. The vaginal douche is the last of all forms of local treatment to stay with the medical profession in the treatment of puerperal infection and it would be wise to discontinue even this form of local manipulation.

RETROPERITONEAL HERNIA: A CASE WITH COMPLICATIONS

By GEORGE G. EITEL, M.D.

MINNEAPOLIS, MINNESOTA

In the spring of last year (1925) the Interstate Medical Society undertook a medical excursion to Europe. On the outbound voyage a professional experience meeting was held in the cabin of the steamer Doric, at which the following paper was presented :*

No attempt was made to treat the general subject in extenso, but, in view of the extreme rarity of these cases, it was thought proper to give the profession the benefit of these observations.

The patient, a male, aged 22, about six feet in height, and somewhat under weight, was admitted to the Eitel Hospital August 4, 1924, complaining of abdominal pain, nausea, vomiting,

*This paper was also presented before the Hennepin County Medical Society in February, 1926.

belching of gas, and failure to pass flatus or fecal matter for six days.

For the past seven years he had had repeated attacks of diffuse abdominal distress. These attacks occurred about once a year, usually in the fall, and lasted from two days to a week. They invariably began with general abdominal pain which was most marked in the epigastrium, and eventually became localized in the right lower quadrant. Toward the latter part of the attack the patient would vomit and would then be relieved of the suffering.

The last attack began July 23, 1924 (ten days prior to admission to the hospital), when he began to have great abdominal distress, which continued for about a week, or until July 30, 1924. At this time, following a rather heavy meal, the pain became very severe. He vomited repeatedly, but with no relief. He continued to vomit intermittently until his admission to the hospital. The pain gradually increased in severity. There was considerable tenderness in the right lower quadrant of the abdomen, but the suffering seemed to be most severe in the *left* lower quadrant. There was no blood from the bowel. The patient had no bowel movements, nor did he pass any flatus for a week prior to admission to the hospital. Except for the above-mentioned facts the previous history is essentially negative.

Physical examination revealed a young man in great pain with a rapid pulse of poor quality and with a subnormal temperature. The abdomen was diffusely distended and there was a generalized tenderness and rigidity. There was dullness in both flanks. Tenderness over McBurney's point was more marked than elsewhere. The remainder of the examination was negative.

A pre-operative diagnosis of acute appendicitis was favored. The patient's condition did not permit of much time for observation and study. The abdomen was opened through a McBurney's incision. There was found considerable free fluid in the peritoneal cavity. The appendix was located and removed with more than the average difficulty. It was bulbous, red, and somewhat enlarged, showing that the patient may have had pain from the appendix at this time, as well as during previous attacks. While attempting to find the appendix a pronounced retroperitoneal tumefaction was discovered, and in order to determine its character the so-called gridiron incision was enlarged by cutting half way through the rectus sheath and muscle to enable the introduction of the entire hand into the peritoneal cavity. A considerable portion of the small bowel was found to have herniated retroperi-

toneally through an opening to the left of the vertebral column, apparently in the region of the paraduodenal fossa, the hernial opening being about the size of my fist. The exact relation of the hernial ring could not be made out on account of the poor condition of the patient. The bowel was pulled out of the hernial sac and brought into the main peritoneal cavity. The part of the bowel that had herniated was distended and blue.

On the first post-operative day there were two bloody stools. There were repeated emeses. The temperature was 100.6° by mouth, and the pulse 120 per minute. Gastric lavage was performed repeatedly, and saline hypodermoclysis was administered. On the second post-operative day there were two bloody stools, and the emeses persisted. The same treatment was continued. On the third post-operative day the vomiting became fecal in character, and the abdominal distension increased. The temperature was 101° and the pulse 120.

With the idea of intestinal obstruction in mind an exploratory laparotomy was made. The peritoneal cavity was opened through an incision in the left flank under local anesthesia of 1 per cent of novocain. A moderate amount of clear fluid was encountered free in the peritoneal cavity. A volvulus of a proximal loop of the jejunum was present. The involved bowel was dark blue and greatly distended. The volvulus was untwisted. The hernial opening was examined, found empty, and reduced in size to about one inch and one-half, whereas at the first operation it was large enough easily to admit my left hand. Jejunostomy (evidently high up) was performed with introduction of a large self-retaining catheter securely placed by purse-string suture and the presenting intestine stitched to the parietal peritoneum. During the operation the patient was given 1,000 c.c. of normal saline solution.

On the following day there was considerable improvement. The temperature was 101° and the pulse 120, and 1,000 c.c. of a three per cent saline solution were administered. There was a large amount of liquid fecal matter from the enterostomy tube, about 1,000 c.c. draining in twenty-four hours. On the second day after the operation the patient had two normal bowel movements. His general condition was good. The catheter was clamped for a short time, but this was followed by chills, and the clamp had to be removed. On the third day there were several loose stools per anum. On the fourth day the catheter was removed and the condition of the patient during the succeeding two days seemed to be improved. However, during the

following three days there were rapid and progressive emaciation and evidence of marked dehydration, no doubt due to excessive loss of fluid through the fistula being so high up in the intestine that the absorbing surface was seriously shortened. So on the thirteenth day after the first operation or on the tenth day after the second operation following a blood transfusion, the fistula was closed by resection of about six inches of the small intestine, and a V-excision of mesentery and an end-to-end anastomosis were made, using catgut and fine silk for sutures.

For two days following the operation the patient had a very stormy time, with rapid, irregular pulse, fecal vomiting, and marked abdominal distension. He was given repeated gastric lavage,

hypodermoclysis with 3 per cent saline solution, digital, and small doses of morphine.

On the third day after the third operation (resection of bowel) he began to improve, and two weeks after the last operation he was sitting up in a chair, his recovery being entirely uneventful. At the present time he appears well and strong and has no complaints and is able to do regular work as a painter.

NOTE.—Since the above was written this patient entered the hospital again (February 22, 1926) for another bowel obstruction caused by adhesions from the former operations. He was immediately operated on and discharged, convalescing, March 10. While the abdomen was open the site of the old hernia was explored and the opening was found to have entirely closed.

PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of December 17, 1925

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, December 17, 1925, at 7:00 P. M. Dinner was served at 6:00 P. M. There were 20 members and 2 visitors present.

The meeting was called to order by the President, Dr. J. S. McCartney.

The minutes of the November meeting were read and approved.

Dr. H. M. N. Wynne reported four cases and showed the pathological specimens mounted under the direction of Dr. J. S. McCartney, Jr.:

1. A case of vaginal myoma (to be reported later in detail.)

2. A case of fibroma of the right ovary removed from a white woman twenty-nine years old. The diagnosis before operation lay between a solid tumor of an ovary and a pedunculated uterine myoma attached to the posterior of the corpus.

3. A case of intrapapillary para-ovarian cyst. A white woman, aged 24, married one year, had a symmetrical enlargement of the abdomen below the umbilicus, which was the only symptom of importance. Menstruation was regular, twenty-five-day intervals, normal amount, lasting from four to five days. The uterus lay behind the cystic tumor. A pre-operative diagnosis of left ovarian cyst was made. At operation a pedunculated parovian cyst was removed from the left side. It was thick-walled and tense, and the outer portion of the tube, except the fimbria, could not be seen or felt, but on section was found to be elongated (about 10 cm.), while the proximal portion of the tube measured 7 cm. The pedicle of broad ligament was 3 cm. from a normal left ovary. The cyst measured 15x15x14 cm., weighed 1,277 grams, contained thick chocolate-colored fluid of 1.133 sp. gr. The inner

surface was covered with papillomas measuring 1 to 10 mm. in diameter. Microscopic sections showed no evidence of malignancy. Convalescence was uneventful.

4. A case of bilateral ovarian carcinoma. A white woman aged 45, married 24 years, with one child, twenty-two years old. This patient had been confined to her bed for two months with continuous pain in the lower right quadrant of the abdomen. There was a large tumor on either side of the lower abdomen. She had lost twenty pounds in weight and had serious constipation. At operation a solid tumor of the right ovary, the size of a large grapefruit, lay on the appendix which was adherent. The tumor on the left side was intraligamentary and had lifted the sigmoid upward and anteriorly. It also compressed the left ureter causing a moderate grade of hydro-ureter. There were some nodules in the cul-de-sac. The gall-bladder was filled with stones. No metastatic nodules were felt in the liver. Operation was done to relieve her pain with no expectation of a cure.

The tumor on the right was easily removed, the tumor on the left was removed with about six inches of sigmoid; and an artificial anus was made. The uterus was not removed on account of the nodules in the cul-de-sac. A large Gibson drain was placed in the left pelvis.

When last heard from, five months after operation, there was considerable vaginal bleeding; however, the very severe abdominal pain had been relieved.

DISCUSSION

DR. SCHLUTZ: I would like to ask Dr. Wynne whether the carcinomatous type occurs in very young patients.

DR. WYNNE: Sarcoma occurs very early.

DR. SCHLUTZ: During 1910 Professor Huebner, of Berlin, reported a case of ovarian and uterine tumor in an infant eleven months old. The surgeon at

the time of operation thought the tumor was carcinomatous. It involved the right ovary and spread over to the uterus. I did not see this case except at autopsy. It caused a good deal of comment at the time.

DR. LAJOIE: While I was an interne I assisted a gynecologist in performing a panhysterectomy. After finishing the operation the gynecologist noticed what he thought was a tumor in the lower pelvis. After much manipulation of the mass and some hesitation, he decided to remove the mass. He made a cross incision very low down and peeled the mass upward. As soon as it was removed it was evident that he had removed the lower portion of the large bowel. He was very much overcome and said that the patient was done for, and he quit, leaving me to finish the case. With much difficulty I managed to get a Murphy button and, by loosening up more colon, was able to bring it down and fasten it to the lower portion. The patient was sent to her room with the expectation that she would not survive. She was given large doses of morphine for two or three days with the idea of keeping the bowels from moving. On the sixth day she passed the button and she soon left the hospital entirely well.

DR. MCCARTNEY: I have enjoyed looking at the tumors which Dr. Wynne has presented. I think if you will look at the sections you will readily see why I call one fibroma and the other myoma. The tumor of the vagina shows the typical structure of a leiomyoma, with the muscle fibers arranged in bundles separated by connective tissue. The section of the fibroma of the ovary shows no such arrangement; the cell nuclei are more elongated, and there is no arrangement of cells and fibers in bundles. I looked in "Ewing's Neoplastic Diseases" to see what he had to say on myoma of the vagina, but he does not mention it, although he gives the other locations where myomata are commonly found. Fibroma is a more common tumor of the ovary than leiomyoma. Fibromata usually tend to involve the whole ovary. Microscopically they are not all pure fibroma; some showing a myxomatous character, others cartilage, and others bone. Sometimes they are in part necrotic. Parovarian cysts differ from the common cysts of the ovary in that they do not contain mucin or pseudomucin. Sections from the wall of this particular parovarian cyst show papillary ingrowths into the cyst; these ingrowths are covered by high columnar epithelium. The cores of the papillae are made up of myxomatous and loose connective tissue, which shows very marked hyaline degeneration. Sections from the bilateral ovarian tumor show, in the right, cords and solid masses of epithelial cells with here and there a definite adenomatous character and little or no necrosis; in the left, very extensive necrosis and comparatively small cords of epithelial cells.

DR. HAYES: The presence of fluid in the peritoneal cavity in a case of carcinoma of the ovary was mentioned by Dr. Maxeiner. These no doubt are the cases in which we must use great precaution. This fluid may be in the cystic ovary. Aspiration may spread it throughout the peritoneal cavity. I recall one case from which the fluid was aspirated. Later, on opening the abdomen, metastatic nodules were found scattered over the peritoneum. As Dr. Barron

has said, these cystic conditions are usually less malignant than the solid carcinomata of the ovary. If removed intact, recurrence is not so likely as in the case of the solid tumor.

DR. MCCARTNEY: Carcinoma certainly develops in the ovary in comparatively young girls. I do not know the age of the youngest patient on our records in the Department of Pathology at the University. We see a goodly number of carcinomas in young girls. I recall a carcinoma of the rectum in a girl of fourteen years.

DR. ALLISON: I want to ask Dr. Wynne regarding the Kruckenberg tumors. Are they not considered primary in the ovary at all? Several years ago I had a case. A doctor in Iowa sent his sister in to see me. She had a mass above the clavicle about the size of my thumb. I sent her to a surgeon who thought the gland should be removed. Dr. Robertson saw it and said it was unquestionably carcinoma and thought we should look to the lungs. I insisted that they do a vaginal examination, but they found nothing. I put her through a gastro-intestinal examination, but found nothing. She got along quite well for a year and a half. Then she developed jaundice, a large abdominal mass, and small metastatic nodules broke out all over her back just as thick as could be. I am anxious to know what you think about that case.

DR. WYNNE: It is very important to explore any questionable pelvic tumor. Such tumors should not be rayed until the diagnosis is reasonably certain, and in many cases it will be found at exploration that immediate removal is possible and curative. Where you feel certain that a tumor is a myoma, under some conditions the treatment of choice will be radiation, but in questionable cases, if possible, I explore. I am thoroughly convinced that Dr. LaVake's stand is correct. I think it is much better to operate promptly than to let the patient wait, as the supposed benign cyst may be malignant.

Concerning the occurrence of cysts in the remaining ovary after removal of the other for cyst, I have no figures of percentages. I have had some patients who have been so unfortunate. This condition is rather frequent.

The case described by Dr. Schlutz must have been a carcinoma. I do not know the ages of the youngest cases reported. Drs. Maxeiner and McCartney have discussed the occurrence of carcinoma in children. We cannot rule out carcinoma absolutely on account of the patient's age, whether under thirty, or twenty, or under fifteen.

I did not intend to discuss all types of ovarian cysts and carcinoma. Dr. Barron mentioned benign cystadenomata. I remember that Dr. Cullen said that he could not tell from the microscopic section whether a cystadenoma was benign or malignant. This, of course, did not refer to the definite carcinomata.

The calcification of solid tumors of the ovary is rather uncommon according to statistics. A most interesting case was reported by Casler. His patient had ceased menstruating some months before and had changed to the masculine type with voice changes and growth of hair on the face, etc. The ovarian tumor removed at operation was so dense that it had to be sectioned with a saw and decalcified before microscopic sections were made. Following

the operation the woman began to menstruate regularly, her voice once more changed, she had the hair removed from her face, and again looked like a woman. Some time after she returned home she became pregnant and died near term from eclampsia.

Dr. Lajoie spoke of removing the sigmoid by mistake. Most surgeons have injured some important viscus unintentionally at one time or another. I operated on a puzzling case some years ago. On rectal examination I felt two openings which were apparently due to stricture high up and pelvic masses. When the pelvic organs were exposed the masses proved to be greatly enlarged tubes with the ends adherent in the cul-de-sac. The tubes were released by cutting through the fimbriated ends, and I found myself looking directly into the rectal lumen. It was then evident that we were dealing with tuberculous tubes which had dropped into the cul-de-sac, become adherent to the rectum, and the rectal wall ulcerated through forming two large diverticula. My first impulse was to make the patient an artificial anus and clean out all the tuberculous tissues in the pelvis including the lower sigmoid and rectum, but the patient's condition became very bad, and I merely placed one layer of sutures in the rectal wall, which made a very imperfect closure of the openings, placed drains through the vaginal vault and a large rubber tube well in the lumen of the bowel above the diseased area and down through the anus. This patient was in shock when she left the operating room, but rallied and had a most uneventful convalescence. Some weeks later she appeared to be in very good health.

Dr. McCartney questions my opinion as to the site of the primary tumor, and rightly so. I have no means of deciding the question, but presumed that the left ovary was primarily affected as the tumor seemed more advanced on that side.

Dr. Hayes spoke of the advisability of removing cysts without puncturing and draining. This is a very important matter. It is an extremely unsurgical procedure to attempt to reduce the size of a cyst by trochar drainage either before or during operation. It is a question of making a large incision and curing the patient or of making a small incision and taking a chance on possible malignant transplants from spilled cyst contents.

Dr. Allison mentioned the Kruckenberg tumors. I know very little about them, having seen only two or three. Lynch, in his book on Pelvic Tumors, mentions the work of Major who reviewed a large number of these cases and found five in which the autopsy failed to reveal a malignant growth in the gastrointestinal tract or upper abdominal organs. Those who hold that no Kruckenberg tumors are primary in the ovary will have to explain away these cases. The case described by Dr. Allison may have been such a one.

DR. MCCARTNEY: I believe that when Kruckenberg first described these tumors he considered them a peculiar type of sarcoma. Later investigators have come to think that the Kruckenberg tumor is really a metastatic tumor of the ovary arising in the stomach, intestine, pancreas, or breast. If you cannot find the primary, you are up against it for a primary source. I think that most people now believe that they are really metastatic carcinoma and not a primary tumor.

Dr. Erling W. Hansen read a paper entitled "The Etiology of Iridocyclitis."

DISCUSSION

DR. PHELPS: Dr. Hansen's excellent paper brings out the fact very clearly that focal infection, instead of lues, should be considered the most frequent cause of iritis. DeSchweinitz did an original piece of work years ago when he showed that dental infection is often the cause of iritis. This was done before the general theory of focal infection was known.

This summer, when I visited Moorfield Hospital, in London, I expected to find great enthusiasm about focal infection as a cause of iritis—for dental sepsis is so common among the poorer classes of the British. Strange to say, they were not finding this the case, perhaps because devitalized teeth are not as common as carious teeth in England. They were paying considerable attention to the gonococcus as a cause and every case was thoroughly investigated for a focus of this organism.

Clapp's statistics, which Dr. Hansen mentioned, were obtained, I believe, from the luetic clinic at Johns Hopkins and that might explain his high percentage of lues in iritis cases.

When we look in the average textbook and see syphilis placed at the head of the list of causes of iritis we can realize the importance of this paper.

DR. SCHLUTZ: I would like to ask Dr. Hansen whether constitutional factors of the exudative type are found in children who have these eye symptoms. It would be interesting to know whether this particular eye pathology develops more readily and more frequently in this type of case. These individuals are subjects who are supposedly easily affected by tuberculosis. They seem to present a favorable soil for this infection. They are also highly susceptible to all manner of focal and local infections. Do the eye men encounter this constitutional condition frequently?

In regard to syphilis: I am impressed with the fact that in this community we seem to see very little syphilis in children. There is either very little of this disease in children or the condition escapes our notice. In the course of a year there is often not enough material adequately to teach the subject to the medical students.

DR. HAYES: Do you advise the removal of these foci of infection during the acute stage?

DR. HANSEN: I did not say anything about the exogenous type in which the etiology is self-evident; where it is carried through an open wound into the interior of the globe.

As to Dr. Phelps' remarks about searching for the gonococcus as an etiologic factor: when Dr. Fuchs was here he made the remark that a great many cases formerly thought to be due to lues, he thought were due to gonorrhea.

As to Dr. Schlutz's question about the constitutional factor in children: it is a fact that very rarely do we see iritis in children. We see a great many with phlyctenular conjunctivitis or keratitis, not only in the type he spoke of as quasituberculous, but in some very husky looking youngsters who do have a tendency to blepharitis and to eczematous conditions in the ears, etc.,—those with an exudative diathesis, but who hardly ever show deeper inflammations.

Dr. Schlutz also spoke of not seeing much syphilis in children in this locality. I think that is particularly true here. In my conclusions I said "especially in this locality." It is confusing to one who has not seen many cases of iritis to read in the textbooks that lues is the chief cause of this condition. Certainly in our section focal infections play a much greater part than syphilis.

Dr. Hayes' question about removing foci in the acute stages brings to mind two cases: one, a doctor with an early iritis. We started looking for the cause, and while he felt that his teeth were all right, we found one with very large granulomata at the roots of a molar tooth. The tooth was decalcified and sections made, and streptococcus viridans was found in the tooth. The iritis promptly cleared up. The other case was the most marked case of iritis I have ever seen. The patient was a woman who had nothing but a few broken teeth left in her mouth. She was quite proud of them and did not want to part with them. Her doctor said she had syphilis, but we could find no trace of it. She finally decided she would have the snags removed, and as soon as she had them out this very intense inflammatory condition cleared up. She was immediately relieved of the pain; in a short time the pupils relaxed, and in two weeks she was entirely well. This just shows the etiology in some of these cases.

—FLOYD GRAVE, M.D.
Secretary.

BOOK NOTICES

NORTH DAKOTA MEDICINE: SKETCHES AND ABSTRACTS:
By James Grassick, M.D. Published by the North Dakota Medical Association, 1926.

Here is a labor of love—a vast labor and of inestimable value—performed by Dr. Grassick as his latest contribution to his beloved State and profession. That it is a labor of love is manifested by the largeness of the task, the fidelity and thoroughness with which it was performed, and, further, by the fact that it is a free-will offering to the North Dakota Medical Profession.

It is fittingly dedicated to the wives of the Pioneer Physicians of North Dakota; or, in other words, to those who—at least many of them—made a larger sacrifice in their devotion to humanity than did many of the pioneer physicians themselves.

At the opening of this human story the pioneer physicians of the Dakotas were located, in the records at Washington, by degrees, minutes, and seconds of latitude and longitude, on "God's garmented plains," which, however, by no stretch of the poetic imagination could be called "seas with no fears in them."

After Lewis and Clark, the explorers of 1804, each of whom was a substitute on occasion for the absent doctor, came the army doctor in the 60's, dates within the memory of not a few physicians who still live and practice, some in the same location occupied by them from that date to this.

The thirty pages of "Sketches" given by Dr. Grassick to these men and women are absorbingly interesting.

The next two chapters are given to the organi-

zation and meetings of the North Dakota Medical Association, with sketches and portraits of every president of the Association,—37 in all,—beginning with Dr. G. J. G. Millsbaugh, first president in 1888, and ending with Dr. J. H. Rindlaub, the president of the current year (1926). The collection of this material alone is a notable event in the history of the profession of the state.

The above subjects occupy one-half the book, and the other half is devoted to official boards, local societies, and a complete alphabetical roster of all the physicians registered in Dakota Territory from June 5, 1885, to June 30, 1890. Another list contains the names of all physicians licensed since the territory became a state. The names of the physicians in these lists are accompanied by names of the schools from which the physicians graduated and the dates of their licenses. An excellent index ends the volume, which is a well-printed, cloth-bound volume, from the press of the Page Printing Company of Grand Forks, N. D.

Dr. Grassick has done a notable service for the medical profession of North Dakota, and has preserved a record which, unrecorded, would soon have been lost forever.

Copies of this valuable record of the history of medicine and medical men in North Dakota, can be had for \$3.50 by applying to the Publication Committee of the North Dakota State Medical Association, care of its chairman, Dr. J. M. Williamson, Grand Forks, N. D.

THE WRITING OF MEDICAL PAPERS. By Maude H. Mellish, Editor of the Mayo Clinic Publications. Second edition, revised, 12 mo. of 168 pages. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, \$1.50 net.

Mrs. Mellish has written this book out of a rich experience in handling medical papers for the press. To a medical education and a literary training, she had added a large practical experience as editor of the Mayo publications; and, let it be said, her mode of editing is—well, it is *different*, for the medical paper that leaves her hands has passed through so many tests that there is no "pathology" left in it.

Mrs. Mellish cannot pass her ability to edit a paper over to the reader of her book, but she can tell the reader how to avoid most of the "bunkers" the inexperienced writer is trapped by; and she can tell the most accomplished writer things that will gratify him to have at his command. For instance, where can one find so complete a list of standard abbreviations of the names of medical journals as is given in the list covering forty pages of her book?

If the reviewer were asked to state the value of this book to the writers of medical papers, and to do so in terms of the probable percentages a knowledge of it would improve such papers, he would place this percentage of improvement on all the papers that have passed through his hands in, say, twenty-five years at from 10 to 90; or if he were asked to state its value in terms of comparison with other like manuals, he would say that there is no other like work to be compared with it.

In a word, if writing a medical paper for oral or printed publication is worth while, surely the best mode of preparing it for publication should be followed; and it is this mode that is so well set forth in this volume.

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AN EFFORT TO CHANGE THE TESTIMONY OF THE EXPERT

Some time ago in these columns we talked about what the medical experts and the legal profession and the committee from the medical profession were trying to do harmoniously to improve medical expert testimony. But Judge Morris Marcus Cavanaugh, of Chicago, has started something which looks as if it might go through to the end, and it will be something more definite and more permissible, perhaps, and will receive more approval than any other plan so far offered. We have all felt that the judge or the court should appoint a commission as one of the possibilities and improvements, but this idea seems to have gone out of vogue, for it became quite evident that political issues would develop and make the testimony more or less valueless or the selection of experts uncertain. Consequently, the movement which occurred in Chicago, when Judge Cavanaugh asked the president of the Chicago Medical Society to appoint a committee of three to examine a convicted slayer held to be insane, seems to be a move in the right direction. This, in all probability, would take the selection of experts out of any possible political interference, for the president of a medical society would be held responsible to his fellows if he made a wrong selection or permitted himself to get into any entanglements, political or otherwise.

The courts and lay people have grown disgusted with the abuses that have grown up around the plea of insanity, and, as an editorial in the *Minneapolis Tribune* says, "To the layman it seems a bit farcical that a man can conveniently call himself insane the moment he is in danger of the penitentiary and then even more conveniently call himself sane the moment he is free from that danger."

Perhaps, in this new way, that is by this method of selection of experts, these abuses can be almost entirely eliminated, particularly if the court fixes the fees and they are divided between the opposing parties, the State and the plaintiff.

Of course, there is probably much of the criminal mentality that is pathological, and it is quite evident that in many cases of murder the plea of insanity is a proper one. But if three men could agree that this were the case the mere presentation of this would clear up a situation which is becoming more and more dangerous. "A dangerous man remains equally dangerous whether he be dangerously criminal or dangerously insane. And if law and medicine could work together in a spirit of scientific co-operation, which will omit much parleying, the loopholes through which many criminals escape might be cut down." Under both conditions, the insane criminal and the criminal who is not insane, the man who had committed murder would be put under permanent custodial care—unless the sentimental emotionalists who flood our courthouses and jails could demand that some of these people be liberated. It is quite well known that most of these pleaders for murderers and other criminals are quite unstable, unbalanced, and many of them are morons or even suffering from a deeper form of feeble-mindedness.

Why not have the same procedure carried out in the selection of experts in injury cases? Would that not be feasible? For it is perfectly evident that either side can get two or four doctors to testify for them, and when there is much contradiction in the testimony the courts and the juries are apt to disregard the whole number of experts. It might simplify a good many of these personal-injury cases on trial if some definite conclusions could be reached before the case was brought into court, that is, an agreement between the doctors as to what the diagnosis was and the probable prognosis. This sounds very idealistic, and we presume it is, and we do not expect it to be adopted for some long time to come because it might interfere with the lawyer's work, and he can still demand his rights as a legal protector of the abused individual and could parley

and delay and employ any expert that he saw fit. But it seems to us that the idea is well worth considering along with the plea of insanity in murder trials.

DR. THOMAS McDAVITT

One of our friends in the medical profession, and when I say "friend" I mean that he was a friend to all the medical men in the state of Minnesota, died at his home in St. Paul on Thursday, March fourth, after an illness of several weeks, due principally to heart disease and some complications. He was nearly sixty-nine years old, his birthday coming in May.

Dr. McDavitt had a medical inheritance, one might say, as he represented the third generation of a family who entered the medical profession, which is rather unusual; and the following is an excerpt from the St. Paul Pioneer Press, which gives a running history of his family back to 1795:

"Born in St. Louis, and educated in medicine at Chicago, Dr. McDavitt represented the third generation of his family to enter the profession. His father, Virgil McDavitt, born in 1835 at Bowling Green, Ky., practiced medicine there, as did a brother of Dr. McDavitt. His paternal grandfather, born in 1795, was a Rockbridge county, Virginia, physician. In 1880 Dr. McDavitt established a practice at Winona, remaining there until 1890, when he came to St. Paul and soon became a prominent member of the profession, first as a general practitioner, and later as an eye and ear specialist of note. Always greatly interested in the work of medical organization, he did much to further it in various capacities. For many years a member of the Minnesota Board of Medical Examiners, and then secretary of the Minnesota Medical Society, he was elected in 1918 to membership in the American Medical Association's board of trustees, a position he held at the time of his death. Greatly interested in patriotic movements, Dr. McDavitt was an active member of the Loyal Legion, and also of the Sons of the American Revolution. He was a prominent Mason, and a member of leading St. Paul Clubs. Surviving him are his widow, formerly Miss Harriet Easton of LaCrosse, Wis., his mother, Mrs. Caroline McDavitt, of Quincy, Ill.; a sister, Mrs. Ira Calkins, also of Quincy; three daughters, Mrs. Charles E. Smith, Jr., of St. Paul, Mrs. Heber Gillespie Stout, of Milwaukee, and Mrs. Donald Konantz, of Winnipeg, and six grandchildren."

Dr. McDavitt will be remembered chiefly for

his secretaryship in the Minnesota State Medical Association for many years. He will be remembered also for his kindly efforts to maintain a standard in medicine. He was a jolly good chap; he had traveled all over the country, had been abroad, and his travels in Russia with other members of the medical fraternity throughout the state was one of the trips he liked to talk about. He certainly got all the joy out of life that was possible under the circumstances. Dr. McDavitt was a man of very strong principles, likes and dislikes, and when he had once made a friend that friend became his permanently. He was interested in the politics of medical society work but in a way to advance medicine, not in any way to advance himself—because when the time came for his retirement he did it gracefully and without rancor; that is to say, he was not like some of us, who, if we are pushed out from some position we occupy we feel resentful. Not so with Dr. McDavitt.

THE JOURNAL-LANCET is glad to record that Dr. McDavitt was one of its loyal friends and stood by it whenever it was in trouble, or whenever a policy was to be changed he was on the side of THE JOURNAL-LANCET. To him we owe more than we can repay.

MISCELLANY

SMALL CITY VS. LARGE CITY PRACTICE

Some years ago (more or less) a successful practitioner in a small city of Minnesota moved into the metropolis of the state. He soon built up a good practice and was apparently very prosperous. When he came to take honest stock of the situation, he decided to return to his old fields and he soliloquized on the subject about as follows:

"I have found that I do not like, but rather heartily dislike, living anywhere but in ——. It reminds me of certain famous paintings: their full beauty and value is best seen and appreciated when one stands back from them a little ways. Certainly I prefer the clean, bright ways of —— to the grime, dirt, smoke, noise, crowding, hemmed-in feeling I have felt here. My four years in —— has spoiled me for liking anything but just the characteristics of ——. I am sure that I also prefer —— on account of the schools and the other factors involved in the care and training of our children.

"As for medical practice, this year up here has given me an inside view and proven to me that even the oldest established doctors here do not get around to more than twenty-five or thirty patients a day, whereas, I alone often had over thirty patients in a day in ——. Considering, then, that it costs from five to ten times as much to do business up here as in ——, to take care of the same number of patients, I certainly can not see any reason for going into practice for myself up here—rather there appears every reason for coming back."

NEWS ITEMS

Dr. Angus Morrison, of Minneapolis, has gone to Europe.

Dr. H. G. Wood has moved from St. Paul to Rochester.

Dr. J. S. Grogan has moved from Flaxton, N. D., to Wadena, Minn.

Dr. E. J. Smith has moved from Summit, S. D., to Effingham, S. D.

Dr. W. D. Rea, of Minneapolis, has gone to Florida to spend several months.

Dr. Walter R. Ramsey and wife, of St. Paul, have gone to California for a month.

Dr. L. M. Boyd, of Alexandria, has been doing postgraduate work in New Orleans.

Dr. L. M. Lowe, of Glyndon, is taking a postgraduate course at Tulane, New Orleans.

Of the 10,204 Indians in North Dakota 637 have tuberculosis, and 667 have trachoma.

Dr. A. C. Strachauer, of Minneapolis, accompanied by his wife, is taking a rest in Florida.

Dr. L. E. Claydon, of Red Wing, has returned home from an extended course of postgraduate work.

Drs. J. S. and E. E. Shrader, of Watertown, have gone to Vienna for an extended course of study.

Drs. Kirby & Holmberg, of Canby, have been appointed county physicians of Yellow Medicine County.

Dr. Mabel Ulrich, of Minneapolis, starts for Russia next week. She will visit Vienna on her return trip.

Dr. F. E. Myers, of Ely, has moved to Eveleth, and will open a hospital in a residence building in that city.

Dr. O. W. Katz, Aberdeen, S. D., has moved to Portland, Oregon, where he will be engaged in Government work.

Dr. J. H. Beaty, of St. Cloud, is expected home next week from New Orleans, where he has been doing postgraduate work.

The U. S. Hospital for the Cheyenne Indians on the Tongue River Reservation opened last week at Lamé Deer, Mont.

The question of erecting a memorial hospital at Langdon, N. D., will be submitted to the city for a vote at the June primaries.

Dr. A. A. Jordon has moved from Hudson, S. D., to Highmore, S. D., and taken over the practice of Dr. G. H. Langsdale of that place.

Dr. G. E. Clark, of Stillwater, has been appointed grand medical examiner of the Grand Lodge of the Ancient Order of United Workmen.

Dr. John H. Rishmiller, Chief Surgeon of the Soo Line, Dr. Gilbert Thomas, and Dr. H. L. Ulrich, of Minneapolis, have gone to Palm Beach, Florida.

Dr. Iver S. Benson, of the Montevideo Clinic, Montevideo, has returned from two months' postgraduate work in the clinics and hospitals of Los Angeles, Calif.

Dr. A. W. Swenson, who has practiced at Bisbee, N. D., nearly twenty-four years, has sold his practice to Dr. D. W. Campbell, of Blackduck, Minn. He will locate on the coast.

Dr. H. M. Johnson, President of the Minnesota State Medical Association, gave the people of Minnesota on February 26 a message over WCCO about the work of the Association.

A very large delegation of Minnesota nurses headed by Miss Caroline Rankiellour will attend the biennial convention of the three nurses associations to be held in Detroit, Mich., on May 17-22.

Dr. O. M. Lanstrum, of Helena, Mont., has gone to Honolulu, where he will inspect the unit of the Shriners' Hospitals for Crippled Children as a member of the Hospitals' Board of Trustees.

Dr. A. J. Carlson, Professor of Physiology in the University of Chicago, will give three talks in Grand Forks, N. D., on March 18, before the students of the University and the Grand Forks District Medical Society.

Dr. R. W. Campbell has moved from Dunbar (Minn.) to Bisbee, N. D., and resumed practice at that place which he left several years ago. He succeeds Dr. A. W. Swenson, who has gone to the Pacific coast to locate.

Dr. W. J. Mayo presented a paper before the Hennepin County Medical Society on March 1. His subject was "Physiology and Pathology of the Blood in Relation to Surgery." The paper will soon be published in these columns.

Dr. Max Seham, of Minneapolis, presented a paper before the Health Section of the Midwest Child Study and Parenthood Education Association last week at Chicago, and he spoke by invitation on the same subject in Boston last month.

The cause of the recent deaths of five nurses at St. Joseph's Hospital, Dickinson, N. D., has been ascribed to encephalitis after a laboratory examination by Dr. H. M. Banks, acting dean of the Medical School of the University of North Dakota.

Ninety active and alumni members of the Alpha Kappa Kappa medical fraternity held a two-day meeting in Rochester last month. There were 40 members of the chapter of the University of Minnesota and 50 alumni in the attendance.

Dr. Thomas S. McDavitt, of St. Paul, died on March 4, at the age of 69. Dr. McDavitt was a graduate of Northwestern, class of '79, and had practiced in St. Paul thirty-six years. For further notice of Dr. McDavitt's work and life see an editorial on another page.

Dr. I. D. Tiedeman, of Drs. Chadbourn & Tiedeman, Heron Lake, has withdrawn from the firm, and will soon take a special course in children's diseases and practice exclusively in that specialty. He will not leave Heron Lake until Dr. Chadbourn has found an assistant.

The U. S. Public Health Service reports that Winona has a higher rating in the quality of the milk delivered to the city than any other city the Department has investigated. Pasteurization, cattle testing, and the health and cleanliness of all persons in the pasteurization plants tell the story.

The county papers of the entire Northwest contain at this season of the year extended reports of the child welfare and general health work being done by county nurses and child welfare workers. The number of persons visited and helped to gain normal health conditions is astonishing.

The "Minnesota Clinic" is the name of a new clinic just formed at Wahpeton, N. D. It contains the names of five doctors, as follows: Dr. T. J. Strong, a North Dakota man, now of Peru, Ind.; Drs. W. N. Haddow, I. S. Benson, and E. H. Smith, of Montevideo, Minn.; and Dr. G. F. Walter, of Minneapolis.

Dr. Macnider Wetherby, of Minneapolis, has begun practice with offices at 516 LaSalle Building. Dr. Wetherby graduated from the Medical

School of the University of Minnesota in December, 1922, and since that date he has done Fellowship work at the University and under the Mayo Foundation. He is specializing in internal medicine.

At the January meeting of the Northwestern District Medical Society held at the Leland Hotel in Minot, January 19, plans were discussed for the entertainment of the State Medical Association, which is to meet in Minot May 25 and 26. The following officers were elected for 1926: President, Dr. George C. Hanson, Minot; vice-president, Dr. H. E. Landes, Kenmare; secretary-treasurer, Dr. M. J. Fardy, Minot; censor, Dr. R. W. Pence, Minot.

The Kotana (N. D.) Medical Society held its first meeting for 1926 at Williston, N. D., on February 9. At this meeting the following named officers were elected for the ensuing year: President, Dr. W. B. Scott, Ray; vice-president, Dr. O. D. McCartney, Williston; secretary-treasurer, Dr. Carlos S. Jones, Williston; censors, Dr. D. J. Halliday, Grenora, and Dr. Ira S. Abplanalp, Williston. This is the first society in North Dakota to report a 100 per cent paid up membership of all the doctors in the district for 1926.

The annual clinical meetings of the American Congress on Internal Medicine and the American College of Physicians were held at the same time in Detroit, Mich., last month. Each of the two programs contained the names of distinguished specialists in America and Europe. The Northwest was represented by a small list of physicians, among whom were the following: Drs. S. Marx White and Clyde A. Undine, Minneapolis; Drs. A. W. Adson and G. E. Brown, Rochester; Dr. Chas. P. Nelson, Northfield; Dr. P. F. Eckman, Duluth; and Dr. Julius Anson, Bismarck, N. D.

The Devils Lake (N. D.) District Medical Society elected the following officers at their annual meeting on January 27: President, Dr. G. F. Drew, Devils Lake; vice-president, Dr. O. A. Arneson, McVile; secretary-treasurer, Dr. J. A. Carter, Warwick; censor, Dr. J. G. McIntosh, Devils Lake; delegate, Dr. Neil McLean, Devils Lake; alternate, Dr. J. G. McIntosh. The President of the State Association, Dr. John H. Rindlaub, appeared before the Society with a very interesting and practical lecture, illustrated with lantern slides, on "The Ophthalmoscope as an Aid to Diagnosis." A large body of nurses attended the lecture, and a vote of thanks was extended to Dr. Rindlaub for his excellent paper.

The Society is desirous of making 100 per cent membership for the coming year.

THE HURON (S. D.) DISTRICT SOCIETY

The regular monthly meeting of the Huron District Medical Society was held Thursday evening (March 4) following a 6:30 dinner at the Marvin Hughitt. Major W. S. Bentley, of Sioux Falls, was introduced to the Society as the guest of the evening.

Major Bentley is a pioneer physician who has been in practice in South Dakota since territorial days. During Pershing's punitive expedition into Mexico he served with the South Dakota troops on the border. Later he saw service with the 147th Field Artillery, one of the South Dakota units, in France. Since the war Major Bentley has been associated with the United States veterans' bureau in medical rehabilitation service. At present he is engaged in maintaining contact with former service men who have or who have had pulmonary tuberculosis. Major Bentley presented to the Society a brief summary of this phase of medical practice.

The feature of the meeting was an address by Dr. O. R. Wright, of Huron, on the subject of "The Doctor and the State." Dr. Wright reviewed the development of the medical profession to its present important position as an economic factor in the organization of modern society. In discussing some of the aspects of the administration of public-health measures it was pointed out what would have to be done in South Dakota to bring the treatment and prevention of tuberculosis to the level of effectiveness attained in some neighboring states.

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A \$6,000 Victor X-Ray hospital equipment including combination table stereoscope, timer, two Coolidge tubes, tank, screens, etc. A complete equipment. Used only a short time in a hospital now closed. Will sell for practically half cost. Address 135, care of this office.

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\$500 buys unopposed \$6,000 cash practice in a Minnesota town of 800 with large unopposed territory. Equipment included. Joining group. Address 118, care of this office.

South Dakota Practice for Sale

An old well-established practice. Averages \$7,000 a year. No competition. Richest farming district in State. Compelled to leave on account of wife's health. Address 130, care of this office.

Position in Minneapolis Wanted

By thoroughly trained and experienced young woman in office, laboratory, and x-ray work with two years training in nursing. Best of references to former employer. Address 129, care of this office.

Locum Tenens Wanted

A substitute for nine months is wanted in a firm of two physicians the younger of whom is to do post-graduate work. In a Minnesota town of 1,000. Salary will be paid. Address 131, care of this office.

Physician Wanted

A physician who desires to associate himself with dentist, in Minneapolis. Fine location; new building. No other physician on the Avenue. Call Hyland 0262; after office hours, Colfax 4247; or address 124, care of this office.

Practice for Sale

A \$5,000.00 practice in best dairy belt of Wisconsin. Nearest competition 10 miles. Best roads and schools. Must be sold at once. Am retiring. No bonus; charges only for drugs and furniture. Address 123, care of this office.

Practice and Hospital Equipment for Sale

Having decided to move to a university city, I offer my \$20,000 practice and hospital equipment for sale or exchange for real estate. It requires a physician who can do his own surgery to handle the practice. Address 117, care of this office.

Offer to Share Office in Minneapolis

A dentist desires a physician to share his office in South Minneapolis. Best corner on Lake Street.

New building. The dentist has been in same location for seven years. Would like a physician of same length of experience. Address 122, care of this office.

X-Ray and Laboratory Position Wanted

By a woman who has also had two years training as a nurse and considerable experience as a nurse and in laboratory and x-ray work. Desires a position in a small hospital. Will give faithful service. Best of reference. Address 137, care of this office.

Practice for Sale

In Southeastern South Dakota; \$5,000.00 to \$7,000.00 unopposed cash practice; business can be greatly increased by doing your own surgery; large territory; money maker from start; I have made good; specializing; practice goes to purchaser of my combined office residence; terms easy. Address 127, care of this office.

Technician Desires Position

In Twin Cities. Experienced, and can give best of references. Address 111, care of this office.

Position in Physician's Office Wanted

By a young woman who can do office work thoroughly—stenography, dictaphone work, book-keeping, etc. Has had two years and a half in a physician's office and three years in a bank. Capable as secretary or all-round office work. Lives at home and will accept moderate salary. Best of references. Address 120, care of this office.

Dentist Wanted

A whole-time dentist at the North Dakota State Hospital. Salary \$150 per month and full maintenance. Must be an unmarried man, of good moral character, and able to do X-Ray work. Should be registered in the State. Unmounted photograph and full references required in first letter. Address Dr. A. W. Guest, Supt., Jamestown, N. D.

Laboratory Technician Wants Position

A graduate nurse with four years experience in all routine chemical laboratory work; also does x-ray, physiotherapy, diathermy, quartz, ultraviolet ray; sinusoidal and basal metabolism treatments. Address 112, care of this office.

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SOME OBSERVATIONS ON DIABETES, WITH SPECIAL REFERENCE TO THE REACTION OF THE DIABETIC PATIENT TO INSULIN

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MINNEAPOLIS, MINNESOTA

IN TWO PARTS—PART I

ON THE ORGANIZATION OF AN INSULIN WARD

In June, 1923, The Ministry of Pensions, England, decided to have all its patients suffering from diabetes treated under uniform conditions with a view to standardizing the Insulin treatment, partly in order to centralize this valuable experience and partly to better enable the ministry to authorize a treatment which would otherwise, if performed according to all the different systems in vogue at the time, give rise to endless confusion and, in the end, to waste of Insulin and money. It was, therefore, after some preliminary observations, decided to reserve for the purpose of investigation and treatment of diabetes Ward 24 of The Ministry of Pensions Hospital, Orpington, Kent. On similar lines diabetics were later treated in an officers' mess, and a few patients who were found to be suffering from pulmonary tuberculosis were treated in a "positive T. B." ward.

As mass investigation of diabetics with a view to a treatment new to everybody was unprecedented in the experience of the staff of the hospital, a certain number of difficulties were encountered from the start. It is here briefly outlined how these difficulties were overcome and how the ward was organized.

When diabetics were to be treated in large numbers it became of great importance to pre-

vent unauthorized food from getting into the ward, and the ward was therefore isolated so far as no diabetic patient was allowed to leave it without special permission, and no patient from other parts of the hospital was admitted into the ward. A small garden adjoining it was reserved for the use of the patients. At the entrance was formed a "customs barrier" and no parcels or visitors were allowed to pass into the ward without inspection by the sister in charge. Regular attendance at the gymnasium was made obligatory for all patients out of bed in order to ensure proper exercises, and the gymnasium instructor co-operated closely with the staff of the ward so that no patient was overexerted. As these exercises apparently were not very popular amongst the men, there were substituted for them after a short time simple walks in the neighborhood. In order also to keep up muscular tone and development of the patients confined to bed, they, as well as all the other patients, were under the constant care of the massage department, and in cases with severe muscular atrophy, electrical treatment of the muscles was found to be of great benefit.

To ameliorate the mental monotony of the ward, concert parties were arranged by visitors from Orpington, who take interest in the hospital, and later the ward was donated a radio set, which was a great success.

Owing to all the extra work entailed in weighing out food, the hypodermic injections, and treat-

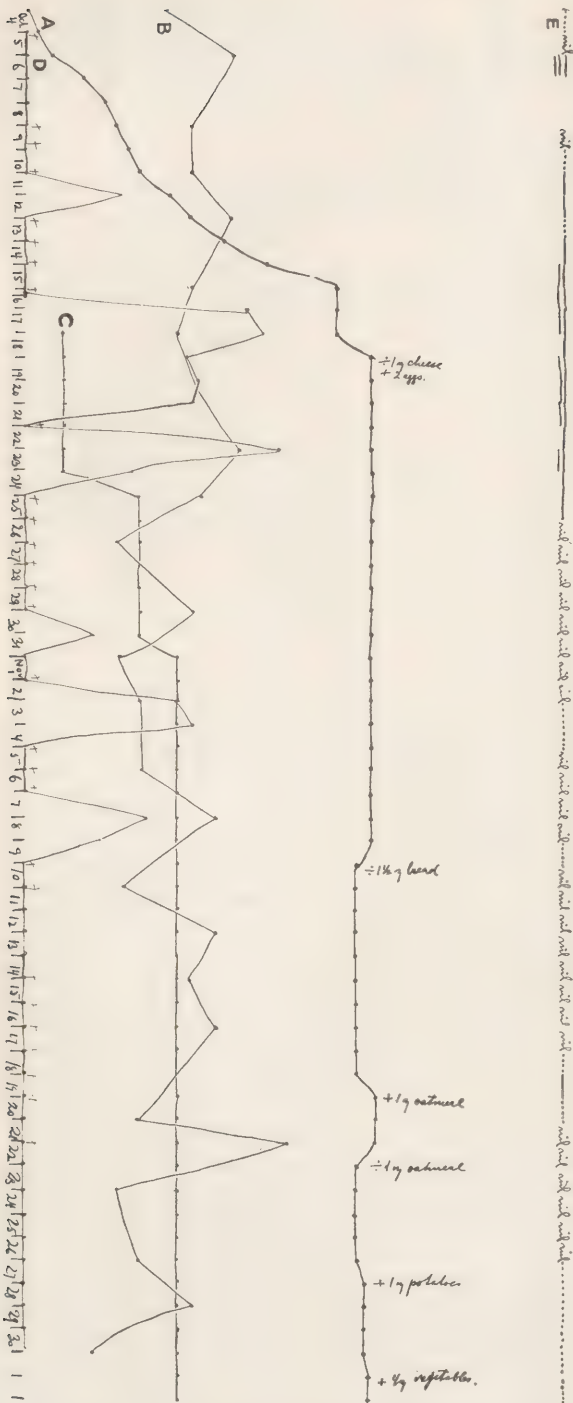


Chart showing the progress of a diabetic patient treated with Insulin. Line A shows how the diet was increased, and a fairly high was obtained with only a transitory glycosuria (D). This became severe when he arrived at the necessary caloric value and Insulin was therefore given (C). When the proper dosage was administered the sugar was again reduced to a trace, and the hyperglycemia, which had hitherto been irregular, became reduced and more steady. Towards the end of his stay in hospital he was aglycosuric and his blood sugar was normal. On November 20th he was given one ounce of oatmeal, but as this caused an immediate response in his blood it was discontinued three days after. On October 6th there was a strong reaction of acetone (E) which was taken to be caused by starvation. Later, acetone was found again and was now thought to be due to the high fat contents of the diet. It cleared up readily under Insulin.

ing all the complications that occurred, the total staff (for day and night duty) was increased to four nursing sisters and eight orderlies for forty-one beds. As this staff acquired an intimate knowledge, not only of the routine work of the ward but also of the various emergencies, especially coma and hypoglycemia, it became highly desirable not to change any members of it unless absolutely necessary, and after this rule had been in force for some time the number of unavoidable mistakes and cases of severe hypoglycemia was considerably diminished, and the ward became much more easy to manage.

The special outfit of the ward amounted to a weighing machine, scales for the food, and a set of instruments for intravenous injections of sterile glucose solution. These latter, however, were not used to any extent, as it was soon realized, that in cases of hypoglycemia, which had reached a stage of unconsciousness, a nasal tube was just as effective and much easier to manipulate than the instruments for intravenous injections.

It was thought that the clinical results would be easier to interpret when charted graphically. The following records were therefore daily plotted on squared paper: Food (in calories) (Line A); sugar in the blood (fasting, except where a clinical condition indicated otherwise), in promille (Line B); Insulin (in units) (Line C); and sugar in the urine (in grammes) (Line D). The acetone reaction was recorded as +, ++, +++, trace and nil at the top of the chart (Line E). Changes in diet and important clinical events were briefly referred to on the charts and described fully on the case sheets. A further clinical record was kept on a special form of weight, blood pressure, dose of Insulin, food in grammes of carbohydrate, protein and fat, and in calories; and of the urine; twenty-four hour volume, specific gravity, glucose in grammes per twenty-four hours, ammonia, urea ammonia coefficient and acetone reaction and acidity whenever tests were performed. Finally was also the blood-sugar content of the blood recorded. In this manner the cases were followed very closely and a certain amount of clinical material was collected.

In the weekly weighings of the patients close adherence to the general rules was observed, namely, constancy of time, clothes, relation to meals, defecation, and micturition; the same standardized machine always being used.

Furthermore the patients were under the constant supervision of a dentist, and special arrangements were made for quick and expedient dental treatment, whenever it was necessary.

The dieting of a large number of patients, unfortunately, had to be done on standardized lines, and the majority of them had to climb a fixed ladder diet until a suitable diet was obtained, which was made a foundation on which the further working out of the case was based; the patient's wishes and needs were then considered, also with a view to the social and financial level on which he would be placed after leaving the hospital.

Apart from this ladder diet it was soon found that a few more special diets were necessary; a subsistence diet on which the patients were kept under observation for a preliminary period in order that a proper diagnosis could be made and an idea of the severity of the case could be formed. Further was it advisable often to interpose a protective "egg and vegetable diet." Many diabetics developed diarrhea when they were given the standardized diets so rich in fat and had to be on a special fat-free diet, which was really the 16th day's standard diet without the fats.

Still another set of diets had to be considered: many patients were admitted from recognized hospitals, etc., with diets already worked out, only to have their Insulin supply authorized. These patients were kept on exactly the prescribed diets and Insulin dosage, and no alterations were made if it could possibly be avoided not even in cases treated on lines totally different from those adopted in our ward.

The diets were composed of simple articles, as far as possible avoiding all proprietary and expensive products. The only exceptions to these rules were the administration of bran and agar and of protein biscuits from a recognized firm.

Each patient was treated in the following way: On admission he was given the preliminary observation diet referred to above (about 1,500 calories), and if his urine was sugar-free or if the sugar content of his blood after twelve hours' fasting was normal or subnormal, a sugar-tolerance test was performed by estimating the sugar in the blood before and at half hourly intervals for two hours after the ingestion of fifty grammes of glucose, and the values found were dotted down on a curve. In true diabetes the rise of this curve is steeper and higher and the fall slower than in the normal person. There is also another curve showing a normal or lower than normal tolerance curve, associated with glycosuria: that is, the renal glycosuria with a low renal threshold. In the cases of this kind that we have seen, the other cardinal symptoms of diabetes have been entirely absent, but there

has often been considerable debility, perhaps resulting from previous intensive diabetic treatment, and in one case there was a history of the patient's brother having died in diabetic coma, but there has been no evidence suggesting a relation between the two conditions.*

If the patient after a few days on this observation diet still showed hyperglycemia or glycosuria he was starved for one day (only in cases of severe emaciation inanition was avoided), and during the following days he was given progressive diets described above, and his chart was carefully watched. If his urine was not sugar-free on the fourth day's diet, Insulin was administered in small doses and the patient was not given the fifth day's diet until the glycosuria had disappeared. Most cases, however, were sugar-free on these low diets and ran without difficulty up the ladder to a certain point, when sugar reappeared in the urine. The diet was again kept stationary until the sugar was controlled with Insulin, and the progress was continued until a suitable diet was reached, in most cases somewhere about 2,000 calories.

On his discharge the patient was given full instructions, both as regards his diet, his Insulin injections, which he had by this time learned to perform upon himself, the proper care of the instruments, and the signs, symptoms, and treatment of hypoglycemia. All necessary information was also sent to the patient's private doctor, and one copy of each instruction given was kept in the hospital for future reference.

Much doubt has been expressed as to the possibility of trusting a layman with a hypodermic syringe and a dangerous preparation like Insulin, and as a matter of fact everything depends upon the patient's intelligence and proper understanding of his condition. We have had the best possible results with intelligent diabetics, whilst, of course, many cases have been very disappointing.

My experience during the fourteen months I was in charge of this department was extended to about 200 cases of diabetes and glycosuria, and upon these the observations contained in this paper are based.

ON SUGAR-TOLERANCE AND SUGAR-TOLERANCE TESTS

Sugar-tolerance tests have been extensively used in the investigation of our cases. They have been found essential for diagnostic purposes and have been used to illustrate the progress of the

*Later experience has shown some of these patients to be very early cases of diabetes. This was written two years ago, and the patients have been watched by my successor and their progress recorded to me.)

cases and thereby also giving an idea as to the prognosis. In view of our experience we have been inclined to give the best prognosis in cases showing hardly any alteration of their sugar-tolerance whilst under treatment; their diabetes seems to be of the stationary type that is not much influenced by any factors. A fairly favorable prognosis has been given in cases whose tolerance seems to show much improvement under treatment, but their condition is of a more fluctuating variety and therefore likely to fluctuate adversely when the patient is no longer under the care of the hospital. A distinctly unfavorable prognosis is of course given when the tolerance decreases in spite of treatment.

Doubt has been raised as to the reliability regarding the constancy of this test, and repeated tolerance tests have in several cases been done on the same person with short intervals and have nearly always shown the curves lying at about the same level with sufficient degree of constancy for us to consider the usefulness of the test beyond doubt.

Except when special conditions were required the test was done in the usual way by giving 50 grammes of glucose by mouth, and by estimating the blood-sugar by McLean's method, before and at half-hourly intervals for two to three hours after, the urine sugar being estimated at the same time. All the usual precautions were taken.

Nine tests on the effect of 50 grammes of levulose on the blood-sugar as compared with the effect of the same amount of glucose were done on seven cases. The results in all cases were to produce a rise in the blood-sugar, which, with one exception (showing no other evidence of hepatic lesion), was of considerably less degree than that associated with the administration of glucose. Glycosuria appeared in all but one case, notwithstanding a rise to 0.19 per cent only.

ATYPICAL TOLERANCE CURVES

Low sugar-tolerance curves were found on several occasions, often associated with hypoglycemia, and could almost always be explained by carbohydrate starvation in some form or other. A case of chronic diarrhea and melancholia showed when given 50 grammes of glucose a curve lying at no point higher than 0.12 per cent. No glycosuria or other evidence of diabetes was present, but when he was given 100 grammes of glucose his curve rose to 0.23 per cent and was associated with 0.8 per cent of glycosuria; after two hours his blood-sugar was still above 0.15 per cent, thus presenting the curve characteristic of diabetes. This condition may be compared

with normal persons who have been on carbohydrate starvation for some time and then suddenly are given a large amount of carbohydrate; they also may show a "diabetic" sugar curve. Three other cases of chronic diarrhea under the care of Dr. Willmore showed fasting hypoglycemia, with a very slight excursion after 50 grammes of glucose. It was thought that these cases, on account of their diarrhea, were prevented from absorbing carbohydrate, and thus really were on carbohydrate starvation. That the same condition may occur in diabetes was shown in an extremely emaciated diabetic with peripheral neuritis, cataract and what was thought to be amyloid disease, the essential feature of this being an intractable diarrhea. For a long time he was hypoglycemic and aglycosuric with an exceedingly low sugar-tolerance curve; later, however, when the diarrhea was somewhat controlled, his sugar-tolerance test became typically diabetic. (Fig. 1.)

A curious curve was that of a diabetic phthisical patient who had a fasting blood-sugar of 0.225 per cent, but this never went above 0.255 per cent, thus giving a remarkably small excursion in spite of the high level. (Fig. 2.)

The tolerance of a case with Graves' disease with all the signs and symptoms of diabetes was that of typical diabetes. (Fig. 3.)

Three cases with normal fasting blood-sugar showed a large excursion in the tolerance test, associated with glycosuria; unlike the typical diabetic patients, however, their curves returned to nearly normal in two hours. One of these cases had been under our care nine months previously and showed then a similar curve, only then with a fasting blood-sugar of 0.22 per cent, showing the case to be one of true diabetes.

Occasionally a secondary rise of the tolerance curve may be met with within two hours, but this has only rarely been of any marked degree in our cases.

INSULIN

In order to obtain some experience of the immediate effects of Insulin on the blood, 20 units of Insulin was in seven cases given before breakfast in the morning and the blood-sugar was estimated at fifteen minutes intervals for two hours; the immediate effect was in most cases to produce a depression in the sugar curve. One exception, however, showed a considerable rise extending over one and a half hours, followed by a sudden fall to below the initial level.

There are, however, different degrees of sensitivity to Insulin in diabetics. Some patients

become so easily hypoglycemic that one might almost talk about hypersensitiveness. Fig. 4 shows a case of hypoglycemia after one week's administration of ten units per day. Later the same patient was perfectly comfortable on double the amount of Insulin, although the carbohydrates had only been increased ten grammes per day and the proteins not at all. Another patient had toxic delusions after two and a half units of Insulin, but this was a case of acquired hypersensitiveness.

Most cases do well on 10 to 40 units a day, but some require much bigger doses. Thus one case was treated for diabetic coma with the following doses of Insulin without clinical evidence of hypoglycemia:

Date:	9/17	9/18	9/19	9/20	9/21
Insulin (units):	280	180	10	20	260

This hypersensitiveness was especially well illustrated in cases of coma with superadded infection. Thus one case of tuberculosis and diabetes in coma had a constant blood-sugar of 0.318 per cent in spite of 140 units of Insulin being administered during four hours. After having recovered from coma, the first patient's urine was not sugar-free on 80 units of Insulin a day with a moderate diet. Two sugar-tolerance tests performed on consecutive days, the second one being preceded by 20 units of Insulin (other things being equal), gave the results shown in Fig. 5. The case illustrated in Fig. 6 was another patient requiring very big doses of Insulin. The effect of Insulin on a moderately severe case reacting well to Insulin treatment is shown in Fig. 7 for comparison.

Seven cases with known sugar-tolerance were given 20 units of Insulin with their glucose meal; two hours later another 50 grammes of glucose were given. The effect was generally to produce an immediate suppression of the curve to be anticipated from glucose alone. Later the second dose of glucose was effective in producing the usual excursion of glucose. One case showed a delayed effect of the Insulin action, the initial action being very large, whereas the second dose of glucose tended towards suppression.

Although the Insulin dose often has to be diminished after a time, it is doubtful how far this is due to a real improvement in the sugar-tolerance or whether it is caused by an accumulation or late effect of the Insulin. Figs. 8 and 9 show improvements in the tolerance of patients not treated with Insulin as compared with that of "insulin-patients." (Figs. 10 and 11.)

On five cases with a positive Wassermann reaction several tests were done to illustrate the effects of mercury and iodide, of Insulin, and of

both in combination on the sugar-tolerance. The tests are unconvincing as to any real improvement being obtained. (Figs. 12-16.)

In some cases the Insulin dose which had previously been found necessary to get the patient's urine sugar-free, could be considerably diminished without glycosuria recurring. Fig. 17 shows some cases where this was done, but Insulin could not be stopped for more than a few days without sugar reappearing in the urine.

None of these observations gives any decisive evidence to show actual improvement of the tolerance resulting from Insulin treatment. On the other hand many factors are met with suggesting accumulative effect, namely, the fact that hypoglycemic attacks nearly always occur after some days' administration of Insulin, but after too short a period for any improvement of tolerance to take place, and the corresponding phenomenon is seen when Insulin, for some reason, is stopped; it always takes a few days for the glycosuria to recur.

The deteriorating influence of tubercular infection on the sugar-tolerance has not been materially altered by the administration of Insulin in our cases of diabetes and pulmonary tuberculosis combined. One of them illustrates particularly well the decreasing tolerance: in the beginning on a fixed diet his urine was free from sugar with a daily dose of ten units of Insulin. Later tubercle bacilli were found in his sputum. On the 27th of September fifteen units were required to keep him sugar-free, and on the 13th of October this dosage had to be increased to 25 units. But only five days later the glycosuria reappeared and forty units per day could only produce intermittent falls in the sugar excretion. Another tuberculous case showed a considerable improvement of his sugar-tolerance, quite independently of his Insulin treatment, for a period during which his pulmonary condition became rapidly worse. How far this improvement lasted until his death could not be decided, as his appetite later became so variable that no exact observations were possible.

The conclusion of our observations is, therefore, that in no case of diabetes mellitus was it possible to demonstrate any definite improvement of the tolerance due to Insulin, and the Insulin treatment has only been found to be symptomatic for the defective sugar-tolerance which is one of the manifestations of the metabolic disorder called diabetes mellitus. These rather discouraging conclusions may, perhaps to some extent, be explained by the fact that our class of diabetics was of a chronic variety where material alterations were hardly to be expected.

Fig. 1

Showing the hypoglycemic curve (a) in a diabetic with chronic diarrhea changed into a typical diabetic curve (b) when the diarrhea was controlled.

a		b	
Time	Bloods %	Urines %	Bloods %
Fasting	0.055	0.	0.115
½ hour after	0.100	0.	0.190
1 hour after	0.150	0.	0.190
1½ hours after	0.105	0.	0.215
2 hours after	0.120	0.	0.175

Fig. 2

Showing the slight excursion of the sugar-tolerance curve in a patient suffering from diabetes and phthisis.

Time	Bloods %	Urines %
Fasting	0.225	0.0
½ hour after	0.230	0.0
1 hour after	0.215	0.7
1½ hours after	0.255	0.4
2 hours after	0.230	0.1

Fig. 3

Sugar-tolerance test of a patient with Graves' disease and marked diabetic symptoms.

Time	Blood-sugar %	Urine-sugar %
Fasting	0.060	
½ hour after	0.140	1.5
1 hour after	0.235	1.7
1½ hours after	0.225	4.5
2 hours after	0.220	3.3

Fig. 4

Showing hypoglycemia after one week on a moderately small amount of Insulin. The hypoglycemia was one of the severest seen in the hospital, the blood-sugar reaching 0.035 per cent.

No. of day	Cal. in diet	Grms. of COH	Ins. Units
1	632	45	10
2	632	45	10
3	750	51	10
4	900	55	10
5	900	55	10
6	1050	56	10
7	1243	56	5*

*Hypoglycemia occurring before the second dose.

Figs. 5-7

Showing the effect of 1 c.c. (20 units) of Insulin on a 50 grammes of glucose tolerance curve.

Figs. 5, 6 and 7

(a) 50 grammes of glucose given alone.

Time	Blood-sugar per cent
Fasting	0.106
½ hour after	0.225
1 hour after	0.268
1½ hours after	0.306
2 hours after	0.348
2½ hours after	0.262
3 hours after	0.275

(b) 50 grammes of glucose given with 20 units of Insulin

Time	Blood-sugar per cent
Fasting	0.200
½ hour after	0.281
1 hour after	0.281
1½ hours after	0.250
2 hours after	0.225
2½ hours after	0.256
3 hours after	0.275

Figs 8-11

Showing change of tolerance of two cases (Figs. 8 and 9), without Insulin treatment, and of two cases (Figs. 10 and 11), on Insulin treatment.

Figs 8, 9, 10 and 11

(a) First tests

Dates	9-11-23	3-24-24	3-3-24
Time	Blood-sugar %		
Fasting	0.045	0.120	0.143
½ hour after	0.100	0.230	0.175
1 hour after	0.130	0.250	0.225
1½ hours after	0.200	0.225	0.218
2 hours after	0.190	0.175	0.306

(b) Second tests

Dates	6-20-24	4-1-24	2 weeks after (a)
Time	Blood-sugar %		
Fasting	0.090	0.065	0.112
½ hour after	0.175	0.115	0.190
1 hour after	0.150	0.190	0.175
1½ hours after	0.140	0.175	0.215
2 hours after	0.130	0.190	0.218

Figs. 12-16

Showing tolerance tests in diabetic patients with positive Wassermann reactions before treatment (Col. 1), after four weeks on mercury and iodide (Col. 2), after Insulin (Col. 3), and after mercury and iodides and Insulin together (Col. 4).

Fig.	Time	Col. 1	Col. 2	Col. 3	Col. 4
12	Fasting	0.143	0.100	0.112	0.205
	½ hour after	0.256	0.143	0.193	0.250
	1 hour after	0.287	0.150	0.225	0.275
	1½ hours after	0.250	0.181	0.187	0.265
	2 hours after	0.225	0.263	0.206	0.300
13	Fasting	0.106	0.131	0.150	0.100
	½ hour after	0.231	0.225	0.206	0.195
	1 hour after	0.218	0.250	0.256	0.205
	1½ hours after	0.143	0.225	0.237	0.230
	2 hours after	0.187	0.225	0.168	0.260
14	Fasting	0.095	0.070		
	½ hour after	0.170	0.140		
	1 hour after	0.280	0.255		
	1½ hours after	0.215	0.175		
	2 hours after	0.205	0.175		
15	Fasting	0.200	0.145		
	½ hour after	0.300	0.210		
	1 hour after	0.315	0.235		
	1½ hours after	0.325	0.305		
	2 hours after	0.315	0.260		
16	Fasting	0.230			0.215
	½ hour after	0.250			0.270
	1 hour after	0.270			0.365
	1½ hours after	0.295			0.350
	2 hours after	0.295			0.365

Fig. 17

Showing twenty-four hourly output of glucose in grammes and daily dose of Insulin in three cases where an Insulin dose previously necessary to abolish glycosuria could be diminished without glycosuria recurring.

Case No. 1		Case No. 1	
Output of glucose in 24 hrs.	Units of Insulin in 24 hrs.	Output of glucose in 24 hrs.	Units of Insulin in 24 hrs.
42	50	36	30
23	—	36	—
23	—	26	—
14	—	28	—
10	—	tr.	—
8	—	—	40
15	—	—	20
9	—	0	—
12	—	—	—
7	—	—	—
tr.	—	—	—
—	—	—	—
—	—	—	20
6	—	—	—
4	—	—	—
0	—	—	—
—	—	—	—
—	—	—	15
—	30	—	—
—	—	—	10
—	—	—	—
—	—	—	—
—	25	—	—
—	—	—	5
—	—	—	0
—	20	—	—
—	—	tr.	—
—	—	—	—
—	15	0	10

*Attack of hypoglycemia.

[To be concluded in our next issue]

SOME PHASES OF THE GOITER PROBLEM*

By J. M. HAYES, M.D.

MINNEAPOLIS, MINNESOTA

The goiter problem is a large subject, and I am not going to attempt to go into detail or cover more than a few points which I think are of vital importance at the present time. You will agree with me that in no condition in medicine or surgery has the mortality rate been reduced more rapidly within the past five or ten years than in goiter cases.

The medical profession has long felt that the thyroid gland had something to do with the metabolism of iodine in the human body, but only recently has it been proven that the function of the thyroid gland is to convert iodine into a form in which it may be taken up and used by the tissues.

Thyroxin, isolated by Kendall, is the thyroid hormone which carries the prepared iodine to the tissues. The tissues of an ordinary man contain about 10 to 14 mg. of thyroxin. To maintain this level the thyroid gland must put out about .5 mg. per day. The thyroxin output governs the rate of transformation of energy of the human body. Decreased thyroxin output results in decreased energy output and a lower basal metabolic rate. Increased thyroxin output results in increased energy transformation and a rise in basal metabolic rate. One mg. thyroxin raises the basal metabolic rate about 2.5 per cent (Kendall.) To manufacture thyroxin the thyroid gland must have iodine.

Marine, Lenhardt, and Kimball have shown that there is a definite relation between the decreased intake of iodine and the incidence of goiter development. They have shown that an intelligent and scientific administration of iodine may prevent or at least greatly reduce the development of goiter. In the schools of Ohio they treated prophylactically a large number of children. None of those so treated developed goiter, while in those not treated, 20 to 25 per cent developed goiter.

Klinger, of Switzerland, took up the same work, but on a much larger scale. He administered 10 mg. of iodine to each child once a week during the school year. This is given preferably between the ages of 10 and 14 years, or just prior to the adolescent age. If a colloid goiter is present the dose is doubled. If an adenoma is present in combination with colloid, 5 mg. of iodine only is given, and the patient followed closely.

The administration of iodine will usually prevent colloid goiter, but will not so often clear it up once it has developed.

Adenomata are never reduced nor absorbed by the administration of iodine. The gland may be put at rest and the colloid absorbed, but the adenoma persists.

Klinger reduced the incidence of goiter from 85 per cent to 13 per cent in the territory in which he worked. He used a chocolate coated tablet which was very palatable and apparently brought about the desired results.

It is felt by those who have followed closely the clinical course of many adenomatous goiters that iodine has been the cause of inducing hyperthyroidism in these cases, but due to the fact that many of these same types of goiters become toxic without the administration of iodine, it is difficult to present any definite statistics to support this contention.

Kimball recently reported 2,659 cases of hyperthyroidism treated by him and his associates during the period between 1921 and 1925. Of these cases 309 seemed to have been precipitated or made worse by the use of iodine. In 210 cases the goiters were of long standing, averaging eighteen years. In each of these cases, the gland was clinically or microscopically adenomatous.

Of this group of 309 cases, 6 had taken only the iodized salt; 37 had taken iodine of their own volition. The remainder were cases in which the iodine had been prescribed by the physician, usually in large doses.

Kimball advises not more than 10 mg. of iodine daily for a period not longer than one month, meanwhile the patient to be watched closely. This should be administered only when no contra-indications exist.

Iodine therapy can be used intelligently only after a thorough knowledge of the classification of goiter. Some differences of opinion still exist as to the correct classification of goiters. Most of the authorities agree on the essential points in the clinical and pathological classification, but differ somewhat in terminology.

Ashoff makes the following general pathological classification:

1. Goiter of the new-born (diffuse enlargement of the gland without colloid deposit.)
2. Mountain goiter:
 - (a) Diffuse colloid goiter of adolescence.
 - (b) Adenomatous goiter.

*Presented before the Minneapolis Clinical Club, January 28, 1926.

3. Basedow's or Graves' disease, or exophthalmic goiter.
4. Thyroiditis, malignancy, or tuberculous thyroid.

Goiter of the new-born usually disappears during infancy or childhood. Administration of iodine to the pregnant mother may prevent this type of goiter.

Plummer believes that the diffuse colloid goiter results when the gland, handicapped by the lack of iodine, stores colloid. He believes thyroid extract or thyroxin is preferable for the treatment of these cases in which colloid has already developed. This gives us iodine in the form in which it is taken up by the tissues. The gland is thereby put at rest, and the colloid material allowed to absorb.

Hyperthyroidism is a result of increased output of thyroxin by the thyroid gland. In 1908 Plummer first differentiated two distinct types of hyperthyroidism: the one in which nervous manifestations predominate (Graves' or Basedow's disease, or exophthalmic goiter); the other in which the circulatory symptoms predominate (toxic adenoma).

Hyperthyroidism in the exophthalmic goiter is due to some external stimulus. This stimulus, whatever it may be, drives the gland on to increased action, resulting in hyperplasia of the gland and an increased output, not only of normal thyroxin but also an uniodized molecule of thyroxin.

Plummer suggests that the beneficial effects of Lugol's solution in exophthalmic goiter may be due to the satisfying of this uniodized molecule of thyroxin by the free iodine.

In exophthalmic goiter the gland is usually symmetrical or nearly so. It does not present the firmness of the malignant gland nor of thyroiditis, but feels firm in contrast to the smooth, spongy texture of the diffuse colloid goiter. There are usually no nodular tumor-like masses present, as in the adenomatous goiter, unless, as may be the case, both conditions exist at the same time.

A characteristic bruit is usually present. This has a drawn-out blowing character of maximum intensity over the superior pole of the thyroid gland. The patient has a feeling of warmth, usually sweating. He has increased appetite with loss of weight and strength, and increased pulse. The pulse rate, however, is not an index of the gravity of the condition, unless the patient is put to rest over a considerable period of time. There is loss of strength, usually first noticed in the quadriceps muscle when climbing stairs. The

pulse pressure is almost invariably high. Ocular symptoms are important when present, first a stare, then frank exophthalmos.

A bilateral exophthalmos with the above symptom complex makes the diagnosis almost inevitable. The degree of exophthalmos is not always commensurate with the severity of the condition. It usually occurs late, but may occur early.

The mental and nervous symptoms are marked and are frequently confused with the otherwise nervous patient. In contrast to the purely nervous patient who makes excuses for her actions, this one is unaware of her peculiar performances.

Crile and his associates have long used the Goetsch or adrenalin test, and they consider it a valuable aid in determining the presence or advancement of exophthalmic goiter.

Du Bois, Means & Aub, Boothby and Sandiford, McCaskey, and Christie have all come to the conclusion that the increase in metabolic rate is the most constant factor in determining the presence of this condition or degree of its progress. Pemberton says, "The basal metabolic rate gives an accurate mathematical index of the degree of functional activity of the thyroid gland." It helps to differentiate hyperthyroidism from neurosis and mathematically expresses the degree of advancement or regression of the disease.

Post-operative mortality in exophthalmic goiter is due to acute hyperthyroidism induced by the operative procedure and to pulmonary complications due to the patient's lowered resistance. Obstructive dyspnea follows injury to, or severing of, the recurrent laryngeal nerve. It was once believed that such injury resulted only in interference with the voice, but it is well known now that many serious conditions result from such injury. Some exophthalmic goiters are cured, perhaps, by rest, diet, and medical treatment, but this is usually only temporary or palliative, and some other form of treatment must be resorted to in order to cure this condition.

In recent years *x*-ray treatment has been instituted with some brilliant results. The work of Means & Aub, of Boston, with this form of treatment, has been quite extensive and apparently very gratifying. Crile, after reviewing 105 papers on favorable *x*-ray treatment of exophthalmic goiter, comes to the following conclusions: "It is utterly impossible to draw conclusions from any collection of statistics on this subject, because the cases reported show such variation and such indefinite technic that the reduction of the statistics would give us nothing accurate by which we could judge future results."

Water's says in the employment of x -ray therapy that we should know the following:

1. The effect on the sympathetic ganglion, vagus, and parathyroids.
2. The histologic change that takes place in the gland.
3. What effect on the gland is desired, whether stimulating or inhibiting.

Recent improvement in surgical care of the exophthalmic goiter has made this the method of choice in handling this type of goiter.

Hyperthyroidism in the toxic adenoma is due to hyperfunction of the new tissue, the adenomatous tissue. There is no external stimulation to the gland. Here only pure thyroxin is given off, but in an increased amount. Remove this new tissue by extirpation and the hyperfunction comes to an end almost at once. The basal metabolic rate comes to normal and remains there.

The adenomatous goiter usually begins during adolescence in conjunction with a colloid goiter. This results, perhaps also, from the demand on the gland for greater activity, because of the insufficient supply of iodine.

The acini of the gland are first increased in number, and these clump together to make up the adenoma, or new growth.

As a rule the adenoma increases in size to about the age of 18 or 19 years, gradually decreases to the age of 25 years, when the colloid disappears and leaves a small adenoma. This frequently remains quiescent for from 10 to 20 years, then suddenly begins to grow, frequently during pregnancy. Toxic symptoms frequently occur soon after this sudden increase in growth. Usually not before the age of 30, more often after 40 years of age. More than 40 per cent of the adenomatous goiters become toxic. (Plummer.)

In toxic adenoma the onset is insidious. The course is even. There are no crises. It is accompanied by a gradual loss of weight and strength. Cardiac symptoms are most prominent. There is palpitation or rapid heart beat. There is dyspnea on slight exertion. The patient cannot work as before. The course is not so stormy as that of exophthalmic goiter. Restlessness, irritability, and mental phenomena are not so marked.

Ligation does not improve this condition, and the administration of Lugol's solution is of doubtful significance. It has been the custom to administer digitalis in large doses to these patients. Recently Plummer reports a decrease in mortality

from 3 to less than 1 per cent, by merely discontinuing the use of digitalis in these patients, especially in the presence of auricular fibrillation or decompensated heart.

Surgery, before visceral changes have been too marked, gives excellent results. No other form of treatment cures these patients. Operation consists in removing all of both lobes, but about one-sixth to one-third of each. The technic worked out and perfected by such surgeons as Kocher, C. H. Mayo, and Crile, is quite usually employed by goiter surgeons to-day. The recurrent laryngeal nerve and parathyroid bodies must be avoided. To insure against injury to these structures, we should leave the posterior and mesial capsule intact.

The recent improvement in handling patients, administering anesthesia, the pre-operative and post-operative management, including the administration of Lugol's solution and ligations, together with the increased knowledge in determining the condition of the patient and the time to operate, have made goiter surgery a comparatively safe procedure. Pemberton recently reports 1,000 consecutive cases of partial thyroidectomy with but two deaths. Crile reports over 400 cases with no deaths. Lahey reports close to 400 cases with no deaths.

Considering the fact that the above includes all the goiter cases that come to these large clinics, including the most advanced cases, does it not seem that there is little chance for more favorable treatment at the present time?

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(For discussion see page 153)

MAY DAY WILL BE EVERY CHILD'S HEALTH DAY IN SOUTH DAKOTA

BY CLARA E. HAYES, M.D.

Director, Division of Child Hygiene, State Board of Health

WAUBAY, SOUTH DAKOTA

South Dakota will be numbered among the other states of the nation in observing May Day as Child Health Day this year. Governor Gunderson has promised to issue a proclamation setting the day aside for this purpose. We have received up to the present time the hearty approval and endorsement of the plan from the following organizations of the state:

State Board of Health
 State Medical Association
 State Dental Society
 State Federation of Women's Clubs
 State Parent-Teacher Association
 American Legion and Auxiliary
 Red Cross
 Kiwanis Clubs
 Lions Clubs
 State Health Association—(tuberculosis)
 State League of Women Voters

The executive officers of these bodies have expressed also their readiness to help with the celebration of Child Health Day. Just as a suggestion to each reader as an individual—

How is the child in *your* home?

Is he a bright, active, happy baby?
 Is he a robust, busy wide-awake "run-about?"
 Is he physically fit to begin the new and taxing responsibility of school life next year?
 Has he ever had a *physical examination*?
 Were there any physical defects found?
 Were those defects overcome or corrected by good care or treatment?

If not, your child has hardly been given a fair start. Perhaps he had a physical examination a year or so ago and was in good condition then. It would be well to have another examination to find out if he is still in good condition or if some abnormal condition, which could be prevented if found early, might be developing.

Why not give your child the benefit of the doubt and have a *health examination*?

Let us make physically perfect primary pupils for the schools of South Dakota in 1926 our goal.

Is your child in school lagging a bit behind his class?

Is he growing thin, irritable, fidgety, finicky about his food and sleeping poorly?

Is he tired, listless, drooping and losing "pep?"

If so, a *physical examination* will tell you the cause, which should be removed before the condition becomes serious.

Let's give all of South Dakota's children a fair start.

Regardless of whether they are yet babies or at the run-about age; whether they are getting ready to start to school next year or are in school now—take your children to your doctor and ask for a complete *physical examination*.

Find out if there is any physical handicap—bad teeth, infected tonsils and adenoids, poor hearing or poor vision, which prevents progress in school, some heart condition which should be guarded or some beginning nervous disorder.

If the examination shows that your child is in good condition it is reason for much gratitude. If abnormal conditions are found, spare no effort in having them made right.

Give your children a *health examination on May Day*.

The doctors of the state are having health examinations and will be busy examining each other before May Day.

SUGGESTED SCHOOL PLAN FOR CHILD HEALTH DAY ACTIVITIES

1. Before May first:

a. General hygiene study (See course of study).

Some material available from State Board of Health.

b. Plan for physical examinations by home physicians and dentists.

Try to interest parents and local organizations.

Make this the principal objective of the entire effort.

c. Develop sports and games.

Outdoor sports and natural athletics are best.

d. Make health posters. (See State Board of Health plan).

e. Plan school programs.

2. On Child Health Day:

a. Health examinations for every child in school.

Each school urged to arrange for this with its local physicians.

b. School health programs—plays, pageants, games, and May Day festivities.

c. Health poster exhibit. (See State Board of Health plan).

Prize winners may be entered in state contest.

- d. Urge window displays in the stores of your community.
3. Following May Day:
 - a. Report all activities to State Board of Health, Waubay.
This is desired for publication.
 - b. Health plans for the next school year.
So far as possible make plans for next year's May Day and work toward it during all the school year.
Make May Day a permanent annual institution.

- c. Urge plans for the following to be done during vacation months:
 - Correction of defects discovered in health examinations.
 - Vaccination against smallpox.
 - Immunization to diphtheria.
 - Immunization to typhoid fever, *especially boy scouts*.

Although the Division of Child Hygiene does not provide material for programs, information as to where it can be obtained, and prices, can be given by State Board of Health, Waubay, South Dakota.

PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of January 28, 1926

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, January 28, 1926, having been postponed one week. Dinner was served at 6:00 P. M., and the meeting was called to order at 7:00 P. M. by the President, Dr. J. S. McCartney.

Upon ballot Dr. H. B. Dornblaser was elected to active membership, and Dr. Hilding Berglund to honorary membership, in the Club.

The minutes of the December meeting were read and approved.

Dr. R. C. Webb presented a case of injury to the left internal semilunar cartilage.

A man, aged 37 years, was injured August 22, 1925, when he was overcome by gas and fell and twisted his left knee. When he became conscious his left knee was very painful and has remained so. The knee frequently locks, and following this it becomes swollen for a short time.

He was first seen on January 26, when his knee appeared normal and had the normal range of motion. There was tenderness over the internal semilunar cartilage. An x-ray of the knee showed no abnormality.

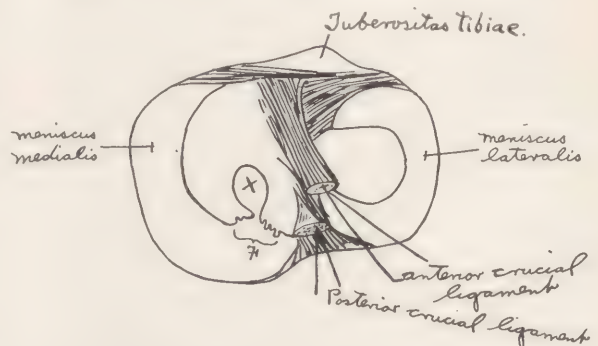
Operation, on January 27, 1926, revealed an injured internal semilunar cartilage in which the posterior one-fifth of the inner margin was torn and frayed, and to the tip of one of the frayed edges there was a piece of cartilage attached by a short pedicle. The attached cartilage was about the size of a watermelon seed and was capable of swinging about in the knee joint. The entire semilunar cartilage was removed. Recovery has been uneventful.

The pathological report on the section removed from the pedunculated cartilage and from the frayed margin was as follows:

Microscopic sections of the attached piece of cartilage showed a dense hyaline connective tissue without evidence of inflammation. Sections from the margin at the point of attachment showed dense

hyaline, in part degenerated, connective tissue with here and there small islands of cartilage. (Reported by Dr. J. S. McCartney.)

The accompanying drawing illustrates the size and position of the injured and diseased cartilage:



Dr. J. M. Hayes read a paper entitled "Some Phases of the Goiter Problem." (See page 149.)

DISCUSSION

DR. ARCHIE BEARD: I would like to ask about digitalis in these cases.

DR. HAYES: In regard to the use of digitalis in toxic goiters; I cannot say why, but Plummer makes this statement and gives his statistics to support the statement. He has reduced his mortality by merely discontinuing digitalis in these toxic adenomata.

DR. BERGLUND: Did you find out whether they used quinidine?

DR. HAYES: I know Dr. Willius has used it, but I do not believe he recommends it in these cases.

DR. SCHAAF: Not only the pathologists but some of the clinicians of Europe deny the true toxic adenoma. Dr. Bieol, of Prag, said he saw plenty of adenomas made toxic by iodine, but he did not know what Plummer's toxic adenoma was. Iodine is very much more dangerous in the North German than in the South German. Prof. Matthes, of Koenigs-

berg, told me that he cannot give one-tenth as much as the men in Switzerland give.

DR. LAJOIE: In this connection I wish to cite, briefly, a case I saw recently. A man, 49 years old, was operated on elsewhere three years ago for removal of the thyroid. Since then he has not been well. One year ago his gall-bladder was removed. Last summer he was treated by an internist for colitis. He was seen by an eye, ear, nose, and throat man without discovery of any serious condition. He was later seen by an orthopedist because of back pain, and his case was diagnosed as "spondylitis." At one time he was thought to have sciatica.

About six weeks ago I was asked to see this man at St. Mary's Hospital. He complained of marked loss of strength, backache, nausea and vomiting, belching of gas, and moist palms, and had been very much depressed for three or four weeks. I was asked to find the cause of his vomiting, and a week was spent in looking him over. I asked a neurologist to see him, and he said his state resembled involuntary melancholia. A basal-metabolism test revealed a -49. We ordered a second basal metabolism, which gave the same result, -49. I then began giving the patient thyroid medication, one grain daily at first, and he appeared to be a different man in two days. His basal metabolism at the end of the first week was -16; at the end of the second week -12; at the end of the third week it was +7, and I reduced the dose. In four weeks it was -7. He had had exactly one grain a day. All his symptoms disappeared, and he is now apparently entirely well.

DR. MCCARTNEY: I want to say just a word about the pathological difference between the toxic and the non-toxic types of adenomatous goiters. Some people claim to be able to differentiate them microscopically, the toxic type showing a low-grade hypertrophy and hyperplasia of the epithelium, and the colloid staining differently from the colloid in the non-toxic types. I think there are too many variables, such as the staining time and the strength of the stain, to put too much weight on the color of the colloid. I do not believe that the low-grade hypertrophy and hyperplasia of the epithelial cells are enough to stand on. There is no question but what they are at times present in adenomata, and one might say from the microscopic appearances that a hyperactivity might be present, but could not say that it was.

As to the question of myocarditis: we do not see many autopsies on goiter cases on our service at the University, but only an occasional one. I saw quite a number on the postmortem service at Rochester. My impression is that many times the findings are disappointing. In toxic adenoma cases the hypertension type of heart and hypertrophy of the thymus are found. If there was decompensation during life, one finds the signs of chronic passive congestion.

DR. LAJOIE: I would like to ask if there are any who think that exophthalmic goiter is not a disease of the thyroid gland, but is a general systemic disease affecting the thyroid.

DR. BEARD: The medical men see these cases, post-operatively, perhaps four or five years later, and the patients still have their symptoms of hyperthyroidism. What are you going to do for them?

DR. HAYES (closing): I was very much pleased to hear Dr. Berglund's discussion of this paper. I have never heard him discuss this topic before and was pleased to learn his attitude toward the diagnosis and treatment we have given.

In regard to Aschoff's work: I heard him while he was in this country, and no doubt his pathological experience is intensive and his ideas in that subject are the best. However, his clinical experience is not so extensive, and here is where we find the discrepancy. As Dr. Berglund has said, he does not mention toxic adenoma. He evidently considers toxic adenoma and exophthalmic goiter two phases of one condition.

Watching these cases clinically and especially post-operatively gives one a more definite means of differentiating between them.

The two cases I have shown tonight illustrate quite clearly the difference between the two. The almost immediate result following the removal of the toxic adenoma is characteristic of this type. In the exophthalmic the results are not so readily brought about. The nervous symptoms especially may be marked for from six months to a year following the operation.

Dr. Barron suggests that the hyperthyroidism should be increased if the iodine in the Lugol's solution completes the non-iodized molecule of thyroxin, rather than decreased, as actually happens on administration of Lugol's solution. I agree with him. It would seem that it should be increased, and that is why we have been afraid to administer it in these cases. It has not been explained, so far as I know, what becomes of this extra thyroxin if the molecule is completed by the iodine in Lugol's solution.

Dr. Barron also suggests that, so long as small doses of iodine or thyroid extract give good results in toxic goiters, it should not require such large doses in the colloid goiter.

These conditions are not at all comparable. In the first case we have a dysfunction and hyperthyroidism. In the latter case, we usually have a hypothyroidism, and we wish to put the gland entirely at rest so that the colloid material may be absorbed. To do this we must administer enough thyroid extract to replace all of that ordinarily put out by the gland.

Dr. Beard feels that the symptoms of exophthalmic goiter are not relieved by surgery. Of course there are many patients who have been extremely nervous all their lives. These symptoms cannot be relieved by surgery, of course; but those who have followed up a large number of these cases clinically report that the vast majority are relieved of all toxic symptoms following surgery.

Crile, Lahey, Pemberton, and others have shown by an excellent follow-up system that not more than 5 to 6 per cent of these cases require more than one operation.

Dr. F. W. Wittich read a paper entitled "Breath-holding Tests in Health and Disease."

DISCUSSION

DR. POLZAK (by invitation): At this time a brief review of the physiology of respiration will be helpful. The entire volume of blood must come in contact with the respiratory membrane lining the air spaces. The respiratory area equals 90 square meters

divided into millions of respiratory units, budding off of the bronchial tree. Each unit terminates the course of the bronchiole whose muscle wall is very sensitive to the excitatory influences from vagi and to inhibitory stimuli from sympathetic nerves. External respiration is provided through co-ordinated action of breathing and circulatory units.

Vital capacity tells us about pulmonary ventilation, and suspended breathing informs us about internal respiration. Vital capacity includes tidal air,—supplementary and complementary air. The residual air amounts to 600-1,200 c.c. Three hundred and sixty c.c. of tidal air reach the alveoli, and 140 c.c. occupy the dead space in bronchial tubes and trachea. The vital capacity varies according to age, sex, height, weight, size, and flexibility of the chest, muscular strength, and physical training.

Internal respiration is necessary for metabolism. Venous blood contains 46 volumes of carbon dioxide and 8 to 12 volumes of oxygen; while arterial blood contains 40 volumes of CO_2 and 20 volumes of oxygen. The amount of gases carried in solution is small, that is, 2 per cent of oxygen and 5 per cent of CO_2 . The balance of the gases are combined chemically—oxygen with hemoglobin, and CO_2 with the alkalis. Normal internal respiration depends on dissociation curve of oxygen and CO_2 . There must be a certain concentration of CO_2 to produce oxygen at optimum dissociation. If the CO_2 is below normal tension oxygen is not yielded readily, and organs consequently suffer from anoxemia, producing air-hunger. Oxygen lack causes acidosis. Forced breathing washes CO_2 from the blood and apnea results.

The activity of the respiratory center is dependent on the normal composition of the gaseous content of blood. If the blood becomes more and more venous or there is increased lack of oxygen, the respiratory center is stimulated until finally the impulses discharged from the center may set into activity practically all the muscles of the body, producing asphyxial convulsions. Lack of oxygen supply causes incomplete combustion, or non-volatile acid formation. The acids diminish the alkali reserve, thereby lowering the carrying power of the blood for CO_2 , thus producing an abnormal dissociation curve of oxygen (acapnia).

Impairment of internal respiration due to any cause is elicited readily by suspended breathing. In the evaluation of respiratory disturbances one must consider the psychic influences, nervous interferences caused by the vagi and sympathetic nerves, disturbances of pulmonary circulation, the ventilatory defects and alteration of blood chemistry.

Suspended breathing tests furnish another angle from which to observe and check up on the deviations from the normal. Any abnormal changes serve as a signal, and guide one to study the patient in detail.

DR. SEHAM: In attempting to apply these functional tests for diagnosis, I think there are several fundamental points that ought to be emphasized. In the first place we must consider the individual variation in order to get the normal standards. In breath-holding contests that we studied several years ago on school children, normal, asthenic, and those afflicted with heart disease, we found so great an individual variation in the normal children that we could not use them as a standard.

The second point is the difference in the same individual at different times. All of these tests are very sensitive. Note, for example, that with the Flack method we found in the same individual at different times great differences in each reading.

The third factor is the matter of motivation. Children are very easily influenced by psychic factors, ingestion of food, etc. We sometimes had a difference of 25 mm. in the blood pressure readings when the teacher would enter the schoolroom.

I would like to ask Dr. Wittich if he got a coefficient of variation amongst the normal, and, if so, what it was; also, if he got the probable error, and, if so, what that was.

I am glad to know that Dr. Wittich got such very marked contrast between the normal and abnormal groups, because in the work I did several years ago I got such variations in the normal groups that I gave it up.

DR. LAJOIE: I would like to ask regarding chest expansion in these tests. You might get a certain figure in these breathing tests, and, with practice, the patient might have a chest expansion of six inches and, later, of four inches, for the reason that the patient had not practised chest expansion for a long time. Would not the chest expansion change the breath-holding tests to some extent?

DR. WEBB: Dr. Wittich's paper presents some very valuable suggestions to the surgeon, and the test appears to be one which should assist materially in the prognosis of a patient's ability to survive an operation. I would like to ask Dr. Wittich to explain further as to just what factors contra-indicate general anesthesia when the breath-holding test is lower than normal? That is, what factors other than the presence of disease in the lungs themselves?

DR. WITTICH (in closing): I wish to thank Dr. Polzak for helping me out in this work, and I asked him to give the physiology of these tests. We have had no experience whatever with children. They are so susceptible to psychic factors that I believe it is of very little value in work with children. We were working with a phlegmatic type of individual up on the Iron Range, Finns, Norwegians, etc. They took things in a very matter-of-fact way, and I do not think anything would stir them up. We did have excellent material to work on for these tests. The boys that Dr. Polzak worked with over at the Y. M. C. A. were very interesting. We discarded those who had just started physical training. Most of them had been taking exercises for at least a year. We had a good group there, too.

We feel that our error is about 10. It would range from 50 to 60 for males, and from 40 to 50 for females. We find that it is of value, and we have not worked out any error of normal deviation. We get the same individual to come back in about a week. You can educate your patient in the basal-metabolic tests, and it is the same way in this.

Concerning Dr. Lajoie's question about practice: of course that would make a difference, but as a test we are applying it to the individual as he comes in. If a new patient comes in who cannot hold his breath thirty seconds, one better put him aside and go over the heart and lungs carefully, and something will probably be found there.

So far as a general anesthetic is concerned, I be-

lieve that when a man cannot hold his breath longer than fifteen seconds he should not be given a general anesthetic. None of the dentists use these tests, and some of their patients die in the chair even if they do use oxygen.

With these tests you have a rough estimation of physical disability. The cases of bone tuberculosis are markedly anemic and run down, although there may not be pulmonary involvement. They are certainly way under par, and as such we wanted to use them; and the difference in breath-holding ability showed up. All those cases were more or less emaciated, were running a temperature, and were quite toxic.

Clinicians are always looking around and grasping at some of these simple functional tests in the hope that they will give a clue, and are trying to link up some of these with their every-day work. As to their being of value; I think we do not pay enough attention to them. Probably if they were worked out and studied they would hold out a promise of some value, especially if carefully observed by a group.

I feel that it has been worth while in our pulmonary and heart cases.

DR. POLZAK: These new innovations to not "take" immediately, but they are of great help to get a line-up for further investigation of the patient.

—FLOYD GRAVE, M.D.

Secretary

BOOK NOTICES

PHYSICAL CHEMISTRY IN BIOLOGY AND MEDICINE. By J. F. McClendon, Ph.D., Professor of Physiologic Chemistry, University of Minnesota Medical School, and Grace Medes, Ph.D., Assistant Professor of Physiologic Chemistry, University of Minnesota Medical School. Octavo of 425 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, \$4.50 net.

This book is highly technical and, as the authors state in the preface, is intended for research workers in biology and medicine.

It would be difficult to write a synopsis of it which would have any possible value.

It contains chapters on the atom, colloids, osmosis, electrolytic dissociation, hydrolysis, radiant energy, ionic equilibria in blood, etc.

—A. A. WOHLRABE, M.D.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume V, Number II (New York Number—April 1925.) 337 pages with 105 illustrations. Per clinic year (February, 1925 to December, 1925.) Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

Dr. William Engelbach writes an article on "Hair Growth and Pigmentation." He speaks of the dearth of information on pathogenesis of abnormal hair growth and pigmentation. The usual contention is that body hair growth is a normal secondary sex characteristic. Recent research shows a relationship between dermal pigmentation and growth of hair to pituitary and suprarenal glands. He dis-

cusses vitiligo in pituitarism and scleroderma and suprarenal cortex, syndromes and their relation to hair growth and pigmentation. He reports cases.

Dr. McKim Marriott discusses hydrocephalus and reports cases.

The spinal fluid is secreted chiefly by the choroid plexuses, and absorption occurs in the subarachnoid space. When the balance between secretion and absorption is disturbed an excess of spinal fluid accumulates, hydrostatic pressure is increased and results in compression of the brain and enlargement of the cranial cavity.

It may be congenital or acquired. The acquired types are due to meningitis or brain tumors.

The diagnosis is usually easy, and treatment with diuretin is often successful.

Dr. Borden S. Veeder discusses the mentally defective infant and child.

Dr. Alexis F. Hartmann has written a very comprehensive article on diabetes mellitus in infants and children. In children this condition is usually presented as an uncomplicated disease. The pancreas fails to secrete insulin normally. Sufficient diets are calculated on the energy requirement as worked out by Holt and Fulis, and sufficient insulin is administered to maintain the blood sugar at a proper level. Protocols with photographs and charts of representative cases are indicated.

Dr. Hugh McCullough, in an article on postural defects and body types, brings before us the defects commonly seen among school children or in outpatient or private work. Cases illustrating various defects and presenting a variety of symptoms are presented, and their treatment is discussed.

Dr. John Zahorsky discusses the Zed reaction in inanition. The name "Zed Reaction" is proposed for a syndrome characterized by fever and diarrhea following inanition when the food supply is increased. It occurs typically following operations for pyloric stenosis. It is a true inflammatory reaction.

Dr. H. W. Soper presents an article on the dietetic management of cardiovascular renal disease.

Since the discovery of albumin in the urine physicians have entertained the notion that meat and eggs are not good food for nephritics. In general, writers on the subject agree as to the restriction of salt and protein in the treatment of edema. The following is his standard diet for the ambulant hypertension patient:

All vegetables, all fruits, both cooked and raw.

Four glasses of sweet milk a day.

All nuts, except peanuts.

Drink water freely.

Use sugar in moderation, use no salt, use no vinegar, use lemon juice freely, use olive oil, use butter (salt free) in vegetables, dates, figs, and raisins.

Cases presented.

Dr. Sidney I. Schwab presents an article on tryparsamid and paresis.

Dr. Drew Luten presents an interesting article on the use of quinidine in auricular fibrillation. The relative benefits and dangers are clearly brought out.

The volume contains eighteen articles, all of special interest to the clinician.

—ARTUR A. WOHLRABE, M.D.

THE JOURNAL-LANCET

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FATIGUE AS A CAUSE OF SCHOOL FAILURES

We are greatly indebted to Dr. Max Seham, a Minneapolis pediatrician, for his talks to teachers and to educational associations in Chicago and Boston on the important problems which concern the child's growth and development. He speaks first of insufficient sleep, overworking, and the lock-step in schools and of the lack of proper supervision as causes of thousands of "repeaters" and failures not only in the Minneapolis schools but in schools elsewhere. And he thinks that half of the children in school are tired, perhaps chronically tired. It is not the tire that follows exertion but a definite disorder which lessens the child's efficiency and which is preventable and correctable. He also, very wisely, says that, instead of immediately giving tonics or removing tonsils when the child is below normal, he thinks that extra milk and sleep and the adoption of rational habits will either prepare the child for such an operation or perhaps entirely do away with the necessity for it. If 40 per cent of the children in our schools are chronically fatigued there must be something radically wrong with the bringing up of the children. It means that they are on the border-line of losing their health, happiness, and success because of the abnormal chronic fatigue, where the potential energy has been so depleted that the power of re-

covery is lessened. The child is not naturally a sedentary person, but is naturally a "motor" playing individual. But when suddenly forced to change habits and spend a certain number of hours daily in so-called studies, there are a large number who do not stand the strain involved in this lock-step system of education. Then, during school age, the child's inhibitory mechanism, which warns him that he is getting normally fatigued, either mentally or physically, is imperfectly developed at this period of life, and it fails to hold the child back when he becomes tired. In the third place, the child may suffer from an emotional irritation or anxiety.

Dr. Seham places the immediate cause of fatigue under five headings, the first of which is insufficient sleep; and this probably fits in a great many families where the child is improperly brought up and is permitted to exercise his own authority rather than develop the normal training habits that he should have. Then, too, inadequate diet is another cause, the second in the list; and inadequate diet is commonly heard of in most families where the child is jerked out of bed, given a piece of toast and a cup of coffee, and sent to school, whereas a normal child would awaken at a reasonable hour and have ample time to prepare for breakfast, which should be wholesome and hearty. A third cause is excessive work for pay, particularly among the poorer classes. This is where it is sometimes almost necessary for the child to work to help out the family purse in order to provide the daily living for the family, and this is a very difficult cause to eliminate, but it can be done if the parents are at all intelligent or are willing to make every effort for the good of the child. The fourth cause is excessive social activity, and it is quite evident that this is carried to excess in many of the families in which there are children who are going to school. In the olden days the school children were not permitted to do much social work except on the playground about the school, where they met, fought, and bled with their child-mates and thereby developed a more or less sturdy physical constitution. The fifth cause is improper hygiene; that is not limited to the poorer classes, but is found in the middle and sometimes in the upper classes where the ordinary rules of common sense and right living are frequently not found. Among our newer semi-social activities is the large attendance of children at the moving-picture shows. Most of the children go approximately twice a week, and the majority of them stay through the entire performance rather than going to an early performance when they can

get home by nine o'clock and get to bed at a proper hour. The result is very inadequate sleep, unnecessary hurry in the morning, and insufficient breakfast.

The prevention of lassitude is based on its schedule of proper habits, and most of these children who go through the early life of school should be trained in various efforts which include the absence of abnormal fatigue, but which give them time and opportunity for physical development. Too many children are great readers, that is, they spend a lot of time in reading. This should be interrupted from time to time by play or work in other directions. There is no reason why one should hesitate about interrupting a child's excessive mental efforts. In the majority of cases the child might better be playing baseball or tag, thus developing his physical state rightfully and making it a substantial and fundamental basis for his future behavior.

The first thing that a child ought to learn—and it is never too early to begin—is obedience. This begins in the first year of life. The formative period is the time for development of normal physiological habits, and the response of the child should follow in obedience of the commands given by the mother. There is no necessity of curbing activities in children so long as they are carried out within normal limits, but this should not interfere with the establishment of good habits. Too many children, unfortunately, become very finicky about their eating, and one mother illustrated the fact by asking Dr. Seham what he would do if a child was so fond of reading and so finicky in eating that you had to bribe him to eat vegetables by letting him read at the table. Dr. Seham promptly replied that he declined to answer the question—that it was immaterial, irrelevant, and incompetent, thus placing the woman in a very absurd position.

There is another reason, of course, why children do not get along well in school, and that is they have not the proper physical stability to carry on school work; they have an inferior physique, and they come from such stock that they are looked upon as nervous children. Consequently they become very much overtaxed although they seem to be full of energy, but their snap and quick responses are merely indications of a true neurotic condition, and in a very short time these children lose whatever prestige they may have had and become dullards,—worthless, useless, and uneducatable.

Children are sent to school too early. The idea that a child should be sent to school at six years of age is absurd. During that time and up to the

age of ten or twelve even, the child should be out-of-doors, out in the sunshine, and have what freedom is necessary, and allowed to grow up instead of being confronted with fixed responsibilities and made to sit still for long periods or forced to control a desire in the school-room. He is in a new environment, and it is not always a healthy one because his nervous system is not well developed. He becomes easily overtaxed, and this is a grave matter. The writer believes that children should not go to school until they are ten to fifteen years of age, and in the meantime under proper supervision they acquire an out-of-door knowledge of things as well as a physical development that protects them from danger and incidentally puts them in a place where they become rapid-fire learners. They can be taught five times as much at twelve to fifteen years as they can at six, seven, or even eight. But with our present system of education, improved as it is supposed to be, these things will prevail: overtaxation, the crowding of the subnormal child, and finally the destruction of the energies, physical and mental, of many children who might have been led into easier paths. Who is responsible for all this? Not the child, but the parents. They want to get their children into school partly to relieve themselves of the burden of their care and partly from a matter of pride, thinking their children ought to be on a par with other children who go to school.

MARCO POLO

The book reciting the incidents of the life of Marco Polo has been lying on a dusty shelf for fifty years, but a new edition of it has recently come out, dressed in proper cover, printed in plain and delightful type, divided into short chapters, and free from the annotations and footnotes that made the ordinary volume almost impossible to read. Manual Komroff has mulled over the old French edition and the English edition and has brought out a book that is well worth looking into very carefully. This edition of Marco Polo is easy reading and entertaining, as most biographies are not.

Marco Polo and his father and an uncle started from Venice more than seven hundred years ago. They traveled by land and sea, stopping at various interesting points, climbing mountains and crossing deserts, were exposed to terrific hardships, and at the end of two years or more they landed in China. The walking must have been particularly good about that time in some places, for they had much time and they saw many interesting things. And when they returned, mer-

chants as they were, they were beset by the reporter of the time, and by inquiring friends, who learned marvelous stories from Marco Polo. The stories were so entertaining and so unusual that Marco Polo was looked upon as an exaggerator. He had seen so much that the people could not possibly believe it. But finally he was arrested for some political crime and was lodged in prison, where he employed a man to write out his recollections and that took many months. Of course it was written out in the method of the country, on parchment. If Marco Polo could have taken it back to China with him he could have had it printed, for while printing was not common in his day the world's first printed book appeared in China in 868. Fifty years before the Gutenberg Bible became known in Europe, books were printed from metal type in Korea. He had a very astute sense of seeing and hearing and of expressing the things that others would have been intrigued by had they been in his place.

Before he left prison his volume was completed and a copy of it was prepared and presented to the French Government which fortunately saw in it some wonderful things and preserved it, edited it, and eventually printed it. Afterwards, when Marco Polo was approaching his death-bed some of his intimate friends asked him to rescind some of the statements he had made because they considered them highly improbable and impossible. The only thing that Marco Polo could do was to tell them he had not related one-half of his experiences, going down to his death unbelieved by his best friends. Since his time, however, many travelers have gone over the same route and have confirmed all that Marco Polo saw, so that his book is real history stating real facts.

Even as you read the revised edition of to-day you wonder how it all could be so well put and how the civilization of China should have ranked so high. The country from which Marco Polo had returned was almost an incredible world, a world of boundless riches, of precious metals and precious gems, a world that thought nothing of battles in which 400,000 men engaged, battles in which 60,000 men were slain, battles in which kings led their battalions from fortresses borne on the backs of four elephants; and a world whose civilization was centuries ahead of Europe's, in which they had far-flung post systems, paved streets and highways, organized charities, paper money, water clocks, weather bureaus, and a highly developed sense of government, especially in the cities. What modern city has surpassed in any essential way the Kin-Sai of seven hun-

dred years ago—a name which signifies "The Celestial City," and which it merits from its pre-eminence to all others of the world in point of grandeur and beauty. Kin-Sai was, "according to common estimation," 100 miles in circuit, its paved streets were 120 feet wide, and carriages with silken curtains and cushions traversed them in endless procession, probably like our automobiles of the present day. In each of its ten market places from 40,000 to 50,000 merchants gathered three days each week. Each side of these squares was "surrounded" with high dwelling houses, in the lower part of which were "shops,"—the modern apartment building. The hours of the night and day were marked off by clocks, and were sounded on gongs by watchmen. The city had a fire department and a salvage corps. It had policemen, part of whose duty was to send the sick and injured to hospitals, numerous and highly endowed. The town had sewers and public baths and a tenderloin of which Marco Polo spoke with a touch of what seems to be like wistfulness. This city stood beside a lovely lake on which wonderful barges plied. For that reason we think that it may even have had ship-news reporters. They had the usual surroundings of a lake, too. On each of the islands was a casino with an incredible number of apartments and pavilions erected and maintained at common expense where all the festivities were celebrated, and it was inhabited by beautiful women—about the same as we have in our modern cities and surroundings and lake districts of the present day. It must have been a great city because the census showed 1,600,000 families and a population of 9,000,000 people. This city paid to Kublai Khan an annual revenue of a matter of \$52,000,000. There must have been some very wealthy people there because they lived in grand style even if they did occasionally kidnap a fine maiden.

The thing that attracted the reader about this book was the fact that the city had so many modern conveniences, although they probably had no electric lights. But so far as other conveniences were concerned it was probably up-to-date from our point of view. But more particularly are we interested in the fact that at that time, seven hundred years ago, modern hospitals were in existence, endowed, equipped, and regulated as they are in this wonderful age. We have been led to believe that the modern hospital was something just built within a few years but evidently not. Then, too, we are very much impressed by the fact that civilization of seven hundred years ago was so highly organized. So it is probably true, from statements which have

been made, that civilization is something which rises and falls and it develops up to a high point of efficiency and then the people become reckless, indifferent, and careless, and the whole country swings back to a decivilized state, only to emerge in after years through some powerful leader into the beginning of another civilization. The country at the present time, so far as our knowledge extends, seems to be verging on a downfall. How far down it will go cannot be disclosed because it will not be present for some years. But when it comes it will be swift and sure, and the country will have to build itself up again by the rebirth of new leaders and a new nation.

MAY FIRST IS CHILD HEALTH DAY

No movement ever begun in this country has greater possibilities for good than the proposal to make May First a day set apart for the special consideration of the needs and problems of child health. It is possible that the fact that most distinguishes the present period from any that has ever preceded it is the increased and more intelligent attention being given to child welfare. It is a matter which does not seem to have had any place in former periods of history.

The call has now gone forth in South Dakota through the State Board of Health to all the interested forces to marshal for a great campaign leading up to May First, on which it is hoped that every community will be able to give physical examinations to all of its children. The program of suggested activities appears elsewhere in this issue. All the efforts, social and educational, leading up to this day are to point toward the physical examination of the child. Some communities in that state will have had this work completed before that date, as some whole counties have already done their work, and others are planning to start soon. But the great objective is to have the work done on or before the First of May.

From the First of May to the First of September is the period especially set for the correction of defects. Any defects revealed by the physical examination should be corrected if possible by the latter date. Without the correction of defects the physical examination loses much of its value.

When we consider that there are very few children who do not have some slight physical defects which can be easily corrected, but which, if allowed to run, might be the beginning of fatal maladies, we realize how greatly fraught with possibilities for good is this suggestion to make May Day a day for child health examinations.

MISCELLANY

"EVERY CHILD HAS THE RIGHT TO BE WELL BORN"

By M. C. Haecker
WAUBAY, SOUTH DAKOTA

Dedicated to Child Health Day (May First)

"Ye shall suffer the children," the sweet Master said,
With His hands laid in blessing on each curly head,
And the children came flocking and crowding around;
They climbed on His knees, and they played on the ground.

I like to believe that they came without fear;
That they whispered sweet confidences in his ear;
That they rode on His shoulders; and crowing with glee

In that benign presence were happy and free.

He must have been happy with deepest content
When to little ones' hugging His great head was bent;

When he turned from the world with its clangor and greed,

In the kisses of babies to bury His need.
Some faces were dirty, and some clean and white,
Some ragged, some smelly, and some black as night;
But He gathered them all in His great knotted arms;
And blessed while they snuggled there free from alarms.

Every child has the right to be well born to-day;
To have thorns of ill health taken out of the way;
To be free for his best, and unshackled, unbound,
To look toward the skies, leave his chains on the ground;

And the hand of the Saviour is reaching this way,
To remove all defects, and bring the new day;
To bind up the broken, to strengthen the weak,
Give sightless eyes vision, the dumb cause to speak.
'Tis His spirit to-day in these things we see;
"Ye shall suffer the children to come unto me."

COUNTY SOCIETIES IN MINNESOTA TO CONDUCT CAMPAIGN AGAINST DIPHTHERIA

In our last issue it was announced that the State Health Department of Minnesota will supply diphtheria toxin-antitoxin and material for the Schick test free of charge.

The diphtheria statistics for 1925 are now available. The mortality rate per 100,000 population from diphtheria in Minnesota was 9.01. This is about the same as the 1921 rate, 9.03, but higher than the rates for 1922 (7.74), 1923 (8.40), and 1924 (8.61). There were 3,778 cases reported and 231 deaths, with a fatality of 6.1 per 100 cases in 1925. This exceeds the fatality rates of 1921 (5.0), 1922 (4.5), 1923 (4.7), and 1924 (5.8). Minneapolis reported 1,717 cases with 108 deaths; St. Paul 805 cases with 32 deaths; Duluth, 21 cases with no deaths. Duluth's record is a remarkable one for a city of 110,000. Exclusive of these cities 1,235 cases with 91 deaths were reported. The ages of the fatal cases in 1925 were as follows:

Under 5 years.....	77 deaths
5 to 9 years.....	79 deaths
10 to 14 years.....	30 deaths
15 to 19 years.....	10 deaths
20 or older	35 deaths

These figures show that the physician in general practice has a greater opportunity to do effective work in the prevention of sickness and for the saving of lives of children by using toxin-antitoxin for immunization against diphtheria than the health officer. Therefore the State Board of Health feels that each County and District Society should take the initiative and in co-operation with the boards of health and the boards of education of the counties, cities, and villages should formulate plans for the systematic use of toxin-antitoxin among children of pre-school age and in the public and parochial schools throughout Minnesota. President Herman Johnson suggests that doctors protect their own children first.

The State Department of Health will loan moving picture films furnished by the Metropolitan Life Insurance Co., and by the John Hancock Mutual Life Insurance Co. upon request, but the express charges for the films must be paid by the locality. Exceedingly attractive and interesting pamphlets about diphtheria may be obtained free of charge from the Metropolitan Life Insurance Co., New York City, or from the John Hancock Mutual Life Insurance Co., Boston, Mass., on request to the home offices, or through district managers of these companies in Minnesota. The State Board of Health approves of the use of these pamphlets by local health authorities.

The State Department of Health will supply free of charge by mail on request of any physician the following material for diphtheria immunization: Toxin-antitoxin in 30 c.c. vials or in 10 c.c. vials, and when required by special circumstances the individual packages of three vials of 1 c.c. each.

Record cards providing for the signed request of parent or guardian for inoculation of the child and for record of the three toxin-antitoxin injections and of the Schick test, will be supplied also.

It is very important that all records of all toxin-antitoxin treatments and the subsequent Schick test be filed where they may be accessible for future reference. Suitable arrangements will be made in each community for the keeping of permanent files of toxin-antitoxin records.

Requests for toxin-antitoxin and the Schick test material should be addressed to the State Department of Health, Old Capitol, St. Paul, Minn.

NEWS ITEMS

Dr. K. W. Brimmer has moved from Canova, S. D., to Volga, S. D.

Dr. Walter Ramsey and wife, of St. Paul, have returned from a trip to the Pacific Coast.

Dr. J. M. Walsh, of Rapid City, S. D., has returned from a trip through the West Indies.

Dr. F. R. Woodward of Minneapolis, has returned from Daytona, Florida, where he spent the winter.

Dr. Thomas Quinby, of Minneapolis, is expected home this week from a European trip, mainly in Spain.

Dr. E. W. Humphrey, of Moorhead, was re-elected president of the Clay County Public Health Association last month.

Mr. Robert W. Cranston and Miss Morrison, students in the Medical School of the University of Minnesota, were married last month.

Dr. Owen W. Parker, of the Shipman Hospital Staff, Ely, has returned from a visit to the hospitals of Chicago, New York, and Washington.

Dr. Minor Morris, who formerly practiced at Ft. Meade, South Dakota, and in Minneapolis, died last month at Alliance, Neb., at the age of 62.

Dr. Arthur Sweeney, of St. Paul, who has been traveling in South America for several weeks, will be home about the middle of the month.

A plan is under way to form a hospital association at Camp Crook, S. D., to be known as the Harding and Carter County Hospital Association.

It is now hoped that the new Deaconess Hospital of Billings, Mont., will be ready for occupancy by July 1. It will be equipped to care for 67 patients.

Of the seventeen deaths in the past fourteen years among members of the faculty of the University of Minnesota 10 per cent suffered from pneumonia.

Dr. D. D. Davis, who for the last year has been home physician of Murray Hospital, Butte, Mont., has decided to return to Nebraska to be in a lower altitude.

The Southern Minnesota Medical Association has changed the date of its meeting from spring to autumn, and the next meeting will be held on October 18, 1926.

A course in home nursing to cover seven weeks in the form of lectures, demonstrations, etc., opened yesterday at the Farm School of the University of Minnesota.

A. Flasher (N. D.) physician, who was convicted of causing death by an illegal operation and sentenced to a term of ten years in the penitentiary, lost his appeal to the Supreme court last month.

Anoka County raised \$800 by the sale of Christmas seals, with which the County Public Health

Association will conduct a free chest clinic for adults and a general clinic for infants and will do other general health work.

Dr. F. E. Harrington, Health Commissioner of Minneapolis, has warned the physicians of the city that unless they register with the clerk of the District Court, as required by law, their birth and death certificates will be ignored.

Dr. F. E. Clough, of Lead, S. D., was appointed last month a member of the South Dakota State Board of Health and Medical Examiners to fill the vacancy on the Board caused by the death of Dr. J. W. Freeman, also of Lead.

Minneapolis Clinic Week has given up its usual spring date of meeting because of the meeting of the State Medical Association and the St. Paul Clinic Week in May. The date of the Minneapolis Clinic Week will be determined later.

An eight-story building to cost a million dollars or more has been planned in Duluth for the exclusive use of physicians, dentists, and allied interests. The Harley estate will furnish the money for the project which has been under way for a long time.

The fifth annual observance of St. Paul Child's Health Day will occur on April 9. St. Paul was a leader in the observance of a child's health day, and the custom has rapidly spread to other states and cities. Distinguished speakers will be present at this meeting.

In 1925, heart disease produced more deaths in Minnesota than any other disease for the first year in the mortality reports of the State. The order of the principal causes of death is as follows: heart disease, cancer, pneumonia, tuberculosis, external causes.

Dr. Isadore D. Freund, of Butte, Mont., died in February at the age of 80. Dr. Freund was a graduate of the University of Michigan Medical School, class of '72, and had practiced in Montana since 1894, in private and hospital work. He was a veteran of the Civil War.

At the last annual meeting of the Board of Directors of the Hennepin County Tuberculosis Association Dr. Walter J. Marcle was re-elected president, and Dr. Alexander Josewich was re-elected second vice-president. The other members of the Board are laymen and laywomen.

Dr. Charles P. Hough, who practiced in Butte, Mont., for a number of years, died last month in Jefferson City, Mo., at the age of 81. Dr. Hough was prominent in medical circles of the West for many years. He was president of

Rocky Mountain Interstate Medical Association and was surgeon of the Montana militia for three terms.

The Child Welfare Division of the State Board of Health of Montana announces that the Board will establish this summer a permanent free baby clinic in Butte. This will be the first clinic of the kind established in Montana. Dr. Hazel Dell Bonness, who is the head of the Child Welfare work in Montana, practiced medicine in Minneapolis for a number of years.

Dr. Willis C. Campbell, of Memphis, Tenn., Professor of Orthopedic Surgery, College of Medicine, University of Tennessee, will lecture before the Minnesota Orthopedic Club on Tuesday, at 8:00 p. m., April 6, in the Anatomy Building of the University of Minnesota. His subject will be "Immobilization of Joints." All physicians interested in this subject are invited.

The American Board of Otolaryngology has arranged for two examinations during the month of April as follows: St. Paul's Sanitarium, Dallas, Texas, Monday, April 19, at 9:00 a. m.; Stanford University Medical School, Clay and Webster Streets, San Francisco, California, Tuesday, April 27, at 9:00 a. m. Applications may be secured from the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Mo.

Dr. Julius Jensen, who has had charge of the practice of Dr. O. V. Opheim, of Starbuck, for some months during Dr. Opheim's absence for postgraduate work, will permanently locate in Minneapolis with offices in 701 Physicians and Surgeons Building. We publish in this issue the first of two papers on Insulin by Dr. Jensen, whose study of the subject was made by him while connected with the Ministry of Pensions Hospital of England. The second part of the paper will appear in our issue of April 15.

TENTATIVE PROGRAM OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

Announcement

The forty-fifth Annual Meeting of the South Dakota State Medical Association will be held in Aberdeen, South Dakota, May 19 and 20, 1926.

In anticipation of one of the largest and best meetings in the history of the Association, the Committees on Arrangement have inaugurated extensive preparations for the meetings and entertainment of the Association.

Wednesday Morning, 9:30 A. M.: May 19, 1926

President's Address. Dr. W. R. Ball, Mitchell, S. D. Urology. Dr. V. J. O'Connor, Chicago, Ill.; (Dr. R. G. Mayer.)

Wednesday Morning, 10:30 A. M., May 19, 1926

Surgical Clinic. Dr. B. F. Lounsbury, Chicago, Ill.;
(Dr. R. L. Murdy.)

Wednesday Afternoon, 2:00 P. M., May 19, 1926

Traumatic Neuroses. Dr. D. A. Nicholson, Seattle,
Washington.

Wednesday Afternoon, 3:30 P. M., May 19, 1926

Diverticulitis of Sigmoid (Lantern slides). Dr. C.
W. Sharples, Seattle, Washington.

Acute External Diseases of the Eye (Clinic). Dr.
W. R. Murray, Minneapolis; (Dr. R. D. Alway.)

Thursday Morning, 9:30 A. M., May 20, 1926

Medical Clinic. Dr. Frederick Tice, Chicago, Ill.;
(Dr. R. D. Wilson.)

Thursday Morning, 10:30 A. M., May 20, 1926

Diabetic Clinic. Dr. R. T. Woodyatt, Chicago, Ill.;
(Dr. C. E. McCauley.)

Thursday Afternoon, 2:00 P. M., May 20, 1926

Endocrine Gland Clinic. Dr. Maximilian Kern, Chi-
cago, Ill.; (Dr. F. V. Willhite, Redfield, S. D.)

Heart Clinic. Dr. M. M. Myers, Des Moines, Iowa;
(Dr. F. W. Freyberg.)

COMMITTEES**Child Welfare**

Clara E. Hayes, M.D., Chairman, Waubay, S. D.
Goldie Zimmerman, M.D., Sioux Falls, S. D.
N. K. Hopkins, M.D., Arlington, S. D.
C. E. Sherwood, M.D., Madison, S. D.

Legislation and Public Policy

R. D. Alway, M.D., Chairman, Aberdeen, S. D.
G. G. Cottam, M.D., Sioux Falls, S. D.
Fred Treon, M.D., Chamberlain, S. D.

Education

J. C. Ohlmacher, M.D., Chairman, Vermilion, S. D.
J. C. Waterman, M.D., Burke, S. D.
F. W. Freyberg, M.D., Aberdeen, S. D.

Hospital

E. W. Jones, M.D., Chairman, Mitchell, S. D.
P. D. Peabody, M.D., Webster, S. D.
B. T. Green, M.D., Brookings, S. D.

Conservation of Vision

L. G. Hill, M.D., Chairman, Sioux Falls, S. D.
L. N. Grosvenor, M.D., Huron, S. D.
J. A. Hohf, M.D., Yankton, S. D.
E. A. Pittenger, M.D., Aberdeen, S. D.

Necrology

S. M. Hohf, M.D., Chairman, Yankton, S. D.
J. H. Lloyd, M.D., Mitchell, S. D.
S. A. Keller, M.D., Sioux Falls, S. D.

LOCAL COMMITTEES

Entertainment—E. A. Pittenger, J. F. Kraushaar,
Owen King.

Finance—C. E. McCauley.

Meeting Place—W. D. Farrell, Paul McCarthy.

Registration—J. F. D. Cook.

Publicity—M. C. Johnson.

Hotel Reservations—W. A. Bates.

Delegates and Councilors Luncheon and Rush Ban-
quet—J. D. Alway.

Clinical Committee—C. E. McCauley, General Chair-
man; R. D. Wilson, R. L. Murdy, R. G. Mayer,
F. V. Willhite, F. W. Freyberg, R. D. Alway,
J. F. Adams.

We aim to have our meetings at the Orpheum
Theatre and an evening affair at the Country Club,
but no formal banquet.

South Dakota State Medical Association,
J. F. D. Cook, M.D.
Secretary-Treasurer.

**MEETING OF THE SOUTH DAKOTA COUN-
TY HEALTH OFFICERS, ABERDEEN, S. D.**

May 18, 1926

To all county and city health officers of the State
of South Dakota: Believing that a meeting of the
health officers will be of mutual benefit and for a
better understanding, of the needs of our State in
preventive health administration, I take this oppor-
tunity of calling this meeting as of above date, and
the following men have signified that they will pre-
sent the following program:

PROGRAM**2:00 P. M.**

County and City Organization. Dr. George M.
Moteler, Director Brown County Health De-
partment, Aberdeen, S. D.

County Survey of the Feeble-minded. Dr. Thomas
F. Ballard, Director Yankton County Health
Department Yankton, S. D.

Goiter Survey. Dr. M. W. Pangburn, Director Pen-
nington County Health Department, Rapid City,
S. D.

Communicable Disease Control. Dr. A. H. Tufts,
Superintendent Minnehaha County Board of
Health, Sioux Falls, S. D. (U. S. Assistant Col-
laborating Epidemiologist).

Communicable Disease Control. Dr. R. C. Warne,
Superintendent Davison County Board of Health
Mitchell, S. D., (U. S. Assistant Collaborating
Epidemiologist.)

Dick Test. Dr. H. A. Miller, M.D., Brookings, S. D.

8:00 P. M.

Moses, The Premier Health Officer. Dr. F. E.
Bouza, Superintendent Mellette County Board
of Health, White River, S. D. (U. S. Assistant
Collaborating Epidemiologist).

Sanitation. Dr. A. H. Wieters, B.S., Director Di-
vision of Sanitary Engineering, State Board of
Health, Waubay, S. D.

Organization of County Health Officers. Dr. J. C.
Waterman, Superintendent Gregory County
Board of Health, Burke, S. D.

Showing of Films. Dr. M. C. Haecker, Director Di-
vision of Education and Publicity State Board
of Health, Waubay, S. D.

Make plans to come and rub elbows with your
co-workers. The State Board of Health will meet
in the forenoon and be present for the program.

Come, let's get acquainted.

STATE BOARD OF HEALTH,
J. F. D. Cook, M.D.
Superintendent.

ANNUAL MEETING OF THE MINNESOTA STATE MEDICAL ASSOCIATION TENTATIVE PROGRAM

Monday morning, May 17, Council Meeting.

Monday afternoon, Meeting of the House of Delegates.

Monday afternoon and dinner, The Trudeau Society.

Monday evening, The Medical Economics Meeting.

Tuesday morning, May 18, Joint meeting of the Medical and Surgical Sections.

Tuesday noon, House of Delegates luncheon meeting.

Tuesday afternoon, Joint meeting of the Medical and Surgical Sections.

Tuesday evening, Banquet.

Wednesday morning, May 19, Joint meeting of the Medical and Surgical Sections.

Wednesday afternoon, Same.

Wednesday evening, Entertainment Ramsey County Medical Society.

Thursday, Ramsey County Clinic Week.

Friday, Ramsey County Clinic Week.

Recent Progress of Psychiatry. Dr. G. N. Ruhberg, St. Paul.

Psychological Hospital. Dr. S. T. Orton, Iowa City, Iowa.

Acute Laryngeal Obstruction. Dr. G. W. Adler, Winona.

Symposium on Infantile Paralysis. Dr. C. C. Chatterton, St. Paul; Dr. M. S. Henderson, Rochester; Dr. Frank Whitmore, St. Paul.

Symposium on Cardiovascular Renal Disease. Dr. H. Berglund, Minneapolis, Professor of Medicine, University of Minnesota; Dr. L. G. Rowntree, Rochester; Dr. C. P. Emerson, Indianapolis, Dean Ind. Univ. Med. College; Dr. V. C. Hunt, Rochester.

A Consideration of Certain Features of Angina Pectoris. Dr. F. M. Smith, Iowa City, Ia.

Surgical Treatment of Periduodenitis. Dr. E. P. Quain, Bismarck, N. D.

Clinic on Diseases of the Thorax. Drs. W. S. Lemon and S. W. Harrington, Rochester.

Treatment of Athletic Injuries. Dr. C. W. Spears, Minneapolis.

Clinic on Gastric Diseases. Dr. Arnold Schwyzer, St. Paul.

Surgery of the Infant Abdomen. Dr. A. A. Zierold, Minneapolis.

Wednesday Evening Entertainment.

This is to be a high-class entertainment for doctors and their wives given by the members of the Association and their families. The feature of the entertainment is that it will be given by the talented members of the profession and their families.

A dance program will follow for the doctors and their wives.

Thursday and Friday

St. Paul Clinic Week.

Monday Evening Meeting

The Monday evening meeting will have the usual Medical Economics Meeting, which originated in Minnesota and which is becoming a national feature. Many of the component societies have held and are holding medical economic meetings, and find them of unusual interest. The Monday evening program to date consists of the following:

Fads and Quacks. Dr. Morris Fishbein, Editor of the Journal of the A. M. A.

Degenerative Diseases and Periodic Health Examinations. Dr. C. P. Emerson.

The Medical Profession and the Press. Mr. Herbert R. Galt, Managing Editor of the Dispatch and Pinoneer Press.

The Tuesday evening banquet will be for physicians only. The speakers of the evening will be the following:

The Mayor of the City of St. Paul.

Governor Christianson.

President of the State Medical Association.

Past President of the State Medical Association.

Dr. Chas. Mayo.

Dr. C. P. Emerson.

Scientific Exhibits

The following persons have requested space for exhibits:

Drs. E. T. Bell and B. J. Clawson, Department of Pathology, will show their recent work on experimental chronic glomerulonephritis and embolic glomerulonephritis. In addition they will have a display of hearts showing various types of valvular and muscular diseases. Microscopic sections and drawings will be exhibited.

Dr. Gordon B. New of the Mayo Clinic has requested space for a demonstration of 10 larynx specimens removed at operation for cancer. The demonstration will be in charge of Dr. Waltman Walters.

Dr. T. B. Magath has a moving picture film of human intestinal parasites that I think will be splendid. You may recall the interest displayed in the moving picture demonstration at the Tri-State meeting in the scientific section.

Dr. Hilding Berglund, Professor of Medicine, University of Minnesota, will give a demonstration of laboratory and bedside methods of determination for blood sugar. Colorimeters will be on display and a demonstrator will be in charge.

Dr. W. P. Larson has consented to give a demonstration of his work with soap in connection with diphtheria, scarlet fever and tetanus. As you recall, by mixing soap with the above toxins they are rendered harmless and immunization results in apparently as great a number of instances and in a much shorter space of time than by the usual method. In addition, serum sickness is avoided. This method has been in use for some time and its value is apparently established. He will show animals injected with pure toxin and other animals injected with toxin soap. This guinea pig demonstration is very striking.

Some space is being reserved for late exhibitors and, if these are not filled, demonstrations from the University of Minnesota will be put into place.

Arrangements Committee for Minnesota State Medical Convention

President Ramsey County Medical Society—Dr. C. C. Chatterton.

Vice Pres. Ramsey County Medical Society—Dr. F. J. Savage.

Secretary Ramsey County Medical Society—Dr. A. G. Schulze.

General Chairman Ramsey County Medical Society—Dr. George Earl.

General Secretary Ramsey County Medical Society—Dr. Warner Ogden.

Banquet Committee—Dr. J. T. Christison, Chairman; Drs. C. N. McCloud, W. R. McCarthy.
 Civic Clubs—Dr. H. O. Skinner, Chairman, Drs. J. F. Borg, H. H. Wolfe.
 Clinical Material—Dr. E. M. Hammes, Chairman.
 Convention Hall—Dr. Donald Bacon, Chairman; Drs. C. C. Bell, H. E. Richardson, Frank Whitmore.
 Entertainment—Dr. A. E. Comstock, Chairman; Drs. Geo. A. Geist, W. C. Rutherford.
 Exhibits—Dr. T. J. Maloney, Chairman, Drs. W. R. McCarthy, Edw. Schons.
 Hospital Clinics—Dr. F. C. Schuldt, Chairman; Drs. W. C. Carroll, E. H. Norris, H. B. Zimmerman, P. H. Kelly, L. A. Hilger, E. J. Enberg, A. W. Ide, O. W. Sterner, E. O. Giere.
 Ladies—Mrs. E. C. Eshelby, Chairman.
 Publicity—Dr. E. A. Meyerding, Chairman; Drs. R. A. Bock, J. F. Fulton.
 Reception—Dr. A. P. Gruenhagen, Chairman; Drs. H. E. Binger, W. Ray Shannon.
 Reunions—Dr. C. N. McCloud, Chairman; Dr. John M. Culligan.
 Medical alumni luncheon and meeting will be held Wednesday noon, May, 19.

Women's Auxiliary of the Minnesota State Medical Association

Officers:

President—Mrs. J. T. Christison, St. Paul.
 1st Vice Pres.—Mrs. O. A. Oredson, Duluth.
 2nd Vice Pres.—Mrs. W. L. Burnap, Fergus Falls.
 3rd Vice Pres.—Mrs. J. D. Lyon, Minneapolis.
 Recording Secretary—Mrs. G. K. Hagaman, St. Paul.
 Corresponding Sec.—Mrs. F. C. Rodda, Minneapolis.
 Treasurer—Mrs. C. L. Larsen, St. Paul.
 Auditor—Mrs. Wade Humphrey, Stillwater.
 Date of Annual Meeting—Tuesday Afternoon, May 18, 1926.

Three vice presidents, treasurer and corresponding secretary to be elected at this meeting.

During the State Medical Meeting, the Women's Auxiliary will present the Educational program for visiting doctors wives.

Mrs. J. T. Christison, President of the State Auxiliary is chairman of the program committee, and the Executive Board constitute the Committee.

Ramsey County Auxiliary will act as hostess at several social functions. Mrs. E. C. Eshelby, President and Mrs. Henry Klein, chairman of the Entertainment Committee are in charge of the arrangements.

The following committees have been appointed:

Membership—Mrs. E. C. Eshelby, St. Paul.
 Legislative—Mrs. Woodard Colby, St. Paul.
 Publicity—Mrs. Sherman S. Hesselgrave, St. Paul.

MADISON (S. D.) District MEDICAL SOCIETY

The Madison District Medical Society of South Dakota met on March 1, at the New Madison Hospital at 8:00 p. m. After a brief business session the following program was given by the hospital staff.

1. Lung Abscess: X-ray findings, Diagnosis, Prognosis and Treatment. Dr. D. S. Baughman, Madison.

2. Fractures of the Lumbar Region of the Spine. X-ray Findings, Diagnosis, Prognosis and Treatment. Dr. R. S. Westaby, Madison.
3. Fractures of the Vault of the Skull: Symptoms, Diagnosis, X-ray Findings, Prognosis, and Treatment. Dr. J. R. Westaby, Madison.
4. Enderarteritis Obliterans: Difficulties of Diagnosis, Frequency of Occurrence, Symptoms, and Operative Treatment. Dr. H. E. Kellogg, Madison.
5. General Discussion.

—J. R. WESTABY, M.D.
 Secretary.

SIXTH DISTRICT S. D. MEDICAL SOCIETY

The first meeting of the Sixth District Medical Society of North Dakota was held at Mandan, N. D., February 9, 1926.

The program began with a dinner at 6:30 p. m. at the Lewis & Clark Hotel. During the dinner the members were entertained by musical numbers.

The scientific program was opened by Dr. J. O. Arnson, retiring president, with a short talk on "The Relation of the Members of the Society to Each Other." In closing, he introduced Dr. G. H. Spielman, president-elect for 1926, of Mandan. Dr. Spielman responded, outlining the policy of the Society during the coming year.

The following papers were then presented:
 "Liver Physiology and Pathology." Dr. L. W. Larson, Bismarck.

"Treatment of Compound Fractures." Dr. John A. Evert, Chief Surgeon, Yellowstone Division, N. P. R. R., Glendive, Mont.

The committee on revision of the by-laws reported, and the report was accepted and laid on the table till next meeting.

—R. W. HENDERSON, M.D.
 Secretary.

Position Wanted

As an office nurse and assistant for a busy general practitioner or obstetrician. Can administer anesthetics. Minneapolis preferred, but will consider outside offers. Address 143, care of this office.

Hospital and Practice in Minnesota for Sale

Terms to right man. New building, offices, operating room, and five beds downstairs; upstairs, living quarters, six rooms, bungalow plan. Cash business \$10,000 to \$12,000 per year. Business runs \$16,000 total. General and surgical practice. This is close to Twin Cities. Equipment optional. Will also rent to first-class man. Am going to specialize and mean business to right man. Address 139, care of this office.

Work Wanted

By a German-speaking physician of excellent training and large experience. Position wanted as assistant, partnership, or locum tenens. Spent eight years in postgraduate hospital training, chiefly surgical and gynecological. Best of references. Address 138, care of this office.

High-Grade X-Ray Technician Wants Position

Has had five years' experience in large clinics and in a large Twin City Hospital. Can give reference

from all for whom she has worked. Available at once. Will go to the country. Address 140, care of this office.

Physicians Wanted in a Group

An eye, ear, nose, and throat specialist and an internalist can find fine offices at reasonable rent with a group in Fargo, N. D. Address 141, care of this office.

Fine Location and Fine Office in Minneapolis

There is a splendid location in a fast-growing section with no competition at 2300 West 50th St. Steam-heated modern offices at reasonable rent. End of the Oak and Harriet carline in fine new section of city. Inquire at above location or telephone Walnut 2413 (Christianson Drug Co.) or Hyland 3129 (owner of property.)

Good Country Practice Wanted

In a prosperous community with plenty of work. Will pay for it. Address 134, care of this office.

Position as Anesthetist Wanted

By a graduate nurse in hospital or dental clinic. Prefer Twin Cities. Address 136, care of this office.

A McCasky System for Sale

With a full list of supplies. Will sell at once for half the original cost. Address 132, care of this office.

Locum Tenens Work Wanted

An experienced physician who is at leisure can be of service to anyone wanting assistance. Address 133, care of this office.

X-Ray Hospital Equipment for Sale Cheap

A \$6,000 Victor X-Ray hospital equipment including combination table, stereoscope, timer, two Coolidge tubes, tank, screens, etc. A complete equipment. Used only a short time in a hospital now closed. Will sell for practically half cost. Address 135, care of this office.

X-Ray and Laboratory Position Wanted

By a woman who has also had two years training as a nurse and considerable experience as a nurse and in laboratory and x-ray work. Desires a position in a small hospital. Will give faithful service. Best of reference. Address 137, care of this office.

Locum Tenens Wanted

A substitute for nine months is wanted in a firm of two physicians the younger of whom is to do post-graduate work. In a Minnesota town of 1,000. Salary will be paid. Address 131, care of this office.

Physician Wanted

A physician who desires to associate himself with dentist, in Minneapolis. Fine location; new building. No other physician on the Avenue. Call Hyland 0262; after office hours, Colfax 4247; or address 124, care of this office.

Dentist Wanted

A whole-time dentist at the North Dakota State Hospital. Salary \$150 per month and full maintenance. Must be an unmarried man, of good moral character, and able to do X-Ray work. Should be registered in the State. Unmounted photograph and full references required in first letter. Address Dr. A. W. Guest, Supt., Jamestown, N. D.

CAPROKOL

(HEXYLRESORCINOL S & D.)



Indicated in the treatment of infections of the urinary tract.
Approximately 45 times the germicidal power of Phenol.
Non-toxic in therapeutic doses.
Renders the urine germicidal.

FOR ADULTS:—Soluble Elastic Capsules CAPROKOL (Hexylresorcinol, S & D.)
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REFERENCES ON CAPROKOL

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LITERATURE SENT UPON REQUEST

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Per Copy, 10c
A Year, \$2.00

HEADACHES*

BY THEODORE S. PAULSON, M.D.

FERGUS FALLS, MINNESOTA

Of all the ailments to which humanity is heir, headache has the record of standing at the top of the list. Few are the individuals that some time or other have not been the victims of it. The complex anatomy of the human economy with its network of nerves connecting all parts of the body and the susceptibility of this nervous mechanism to all kinds of stimuli with the resulting pain which is known as *headache*, makes it all the more difficult at times to ascertain its cause. It may be caused by as simple a thing as lack of sleep which may be easily corrected on the one hand, or it may be due to a tumor of the brain with its difficulties of exact location and treatment on the other. One would expect that in dealing with a symptom so common that the different specialties of medicine would make claims for its successful treatment and relief in their respective fields, and such is also the case. The gynecologist will attribute certain headaches to a displaced uterus or certain pelvic disturbances. A correction of these physical faults is supposed to give relief and often does. The internal medicine man will look for faulty digestion or elimination, and by proper attention to these functions a certain number may be relieved. The ophthalmologist and rhinologist thinks that they are in a specially favorable position in dealing with this symptom, inferring that most headaches are of ocular and nasal origin, but, even taking for

granted that this be true, the treatment belongs to the entire field of medicine with all its branches.

The purpose of this paper is to report a few refractory cases, such as would naturally consult an oculist for the relief of asthenopic symptoms. It is a common belief among the laity that all headaches come from eyestrain, and, when this is the case, it is usually promptly discovered by a careful examination. When prescribing glasses for errors of refraction fails to give relief, however, other possible causes must be looked for, and it is not uncommon to find several things at fault and to fail to get results until these several things have been corrected. It thus at times becomes almost impossible to tell just exactly what part of the treatment it was that produced the result, a matter of considerable chagrin to the scientifically trained mind. Be this as it may, the only thing the suffering patient is concerned about is the relief of his pain, and, if this be attained, he is grateful to his physician although the latter may be very much dissatisfied with his diagnosis.

The percentage of eye cases coming before us suffering with headaches on account of eye difficulties is variously estimated by different authors. Hague, of Milwaukee, affirms that 50 per cent of headaches are due to eyestrain. De Schweinitz, one of our most conservative and best-known oculists, estimates that 70 per cent of all functional headaches are due to eyestrain.

The question naturally arises, how does eye-

*Presented before the Park Region Medical Society at Fergus Falls, Minnesota, January 13, 1926.

strain produce headache? Dunn and Ellis, who have made a detailed study of this subject, believe it is produced by intracranial pressure. This theory corresponds pretty well with the headache due to high blood pressure. In the latter condition the headache may be likened to a tight fitting band over the back part of the head and neck. The moving pictures are often accused of producing severe eye symptoms and headache. This is denied by those who have given this matter a close study, who claim that this never takes place to normal eyes. In fact this test is a good one to apply after a case has been refracted: if there is no discomfort it is a sign the error has been properly corrected.

The question sometimes comes up, what is the minimum refractive error needing correction? This sometimes is hard to answer, and in a general way it may be said that the degree of error has nothing to do with the amount of discomfort produced. In fact the lower degrees seem to produce the most trouble. The explanation for this is that in the lower degrees the eyes will strain to maintain normal vision while in the higher degrees the eyes are unable to keep up the strain, and, as a result, the vision is, of course, reduced, but the patient may have no symptoms otherwise.

It is, therefore, not unusual to have a case of .50 D hyperopia or a .25 D astigmatism suffer with severe headaches, while a case having 1.50 D hyperopia or a 1.00 D astigmatism may be free from asthenopic symptoms. In the former case the vision would be expected to be normal, while in the latter the vision would be defective. I have taken as a guide the patient's ability to tell small differences in prescribing for low-grade errors of refraction. If he tells differences of .25 D without hesitation there is good reason to presume that the headache may be due to refractive error, though small.

A form of asthenopia often overlooked is that of phoria. The test is so simple and so quickly made that no record should be considered complete without the use of the Maddox rod. While the greatest care and conservatism should be exercised in prescribing prisms for esophoria or exophoria, there are many cases of headache due to hyperphoria that can be made absolutely comfortable by prescribing prisms, base up or down.

An affection not infrequently mistaken for headache of ocular origin is the so-called vacuum headache. This is caused by a closure of the opening to the frontal sinus. The absorption of the air causes a negative pressure followed by congestion. This congestion, together with the

toxic substances in the blood due to the poor circulation and the pressure, produces the symptoms of a dull, low-grade, unending headache. This is made worse by use of the eyes, which accounts for it easily being mistaken to be due to ocular strain. There may be no nasal symptoms, obstruction, or discharge. The headache, though frontal, is occasionally referred to the external angular process of the frontal bone. This type of headache is usually present in the morning, becoming worse with the use of the eyes for near work. However, there are cases where headaches are only precipitated by the use of the eyes for near work. Unlike headaches due to eye-strain and which are generally a daily occurrence, vacuum headaches characteristically appear at irregular intervals and may disappear as suddenly as they appear. Just as in empyema of the frontal sinus this headache is increased on stooping and often attended by a sense of dizziness. Ewing's sign, "tenderness of the upper, inner angle of the orbit at the point of attachment of the pulley of the superior oblique muscle and internal and external to it," is pathognomonic of the condition. As the function of this muscle is to turn the eye downward and inward, it is called into play during the act of accommodation, causing a tugging at the tender point. The tenderness of this area is explained by Sluder "as arising from a closure of the outlet of the frontal sinus thereby producing negative pressure through absorption of the oxygen therein contained with a resulting congestion of the lining membrane together with the underlying bone." Tenderness of the eyeball to backward pressure is almost always present. Sluder groups the nasal conditions that may give rise to vacuum headaches as follows:

1. When there exists an enlargement or tilting of the septum tubercle out of the midline in a normal or particularly narrow nose.
2. Narrowing or occlusion of the hiatus semilunaris through anatomical variation so that the uncinate process and bulla are in contact.
3. Edema of the vault of the middle meatus.
4. Anatomical insufficiency at the vault.
5. Middle turbinate hypertrophy.
6. Empyemas or coryzas that have gotten well but have left a degree of swelling in the vault of the middle meatus sufficient to keep the frontal sinus closed.

In view of the fact that many people suffer from vacuum headache without any visible pathology in the nose it is difficult at times to feel convinced that the diagnosis is correct even though Ewing's sign be present and the history

of periodic attacks. If the patient presents himself during the attack and the middle turbinate be shrunk with adrenalin and this is shortly followed by relief, either partial or complete, there is strong presumptive evidence that the symptom is due to lack of ventilation of the frontal sinus. The treatment consists of applying astringents which will usually give relief if the mucous membrane is of the turgescient type. If of the hyperplastic type, surgery is indicated, removing the anterior part of the middle turbinate or doing a submucous resection of the septum if the latter is thickened or deformed.

The most difficult form of headache to treat is that usually known as migraine. This may be defined as a nervous affection marked by periodic headache, often one-sided and accompanied by nausea, vomiting, and various sensory disturbances. This malady is more common among women than among men and appears in about the ratio of three to one. There is a marked hereditary tendency, and in women it begins to appear at puberty and has a tendency to subside after the menopause. The attacks may appear at intervals of days, weeks, or months, or it may be so frequent as to make it one continuous suffering. Generally the headache at first involves but one side of the head, usually the forehead or occiput, gradually extending over the whole calvarium. The pain is of a throbbing or binding nature and may be accompanied by sparkling light which increases in extent until finally the patient is temporarily blind. Dizziness, nausea, and vomiting are usually present. Such a seizure lasts usually from six to twelve hours, sometimes longer, even two or three days. All gradations and variations of the above picture may occur and certain prodromata are usually constant, warning the patient that an attack is coming on.

The etiology of migraine is not known. All authorities agree on one thing, namely, that hereditary elements are present in a very large number of cases. Many facts point to an important rôle played by vasomotor apparatus, and others suggest defective metabolism, defective elimination of waste substances, and consequent auto-intoxication as causes. These theories seem to be supported by the fact that an attack may often be provoked by certain exciting causes, such as excesses with alcohol, tobacco, tea or coffee, or by emotional or mental overstrain, shock, overwork, and especially fatigue of the eyes.

The treatment is purely symptomatic. The general health should be looked after, and it is needless to say that the teeth, tonsils, ear, nose, and blood condition, diet, and digestion should be considered.

If certain precautions are taken at the onset of the prodromal symptoms the attack can be greatly mitigated. These consist chiefly in hastening elimination by using saline laxatives and giving plenty of water; carbohydrates and red meats should be reduced in the diet and milk should be given freely. It is important that the patient should not starve himself. Full feeding is in many cases of the greatest value.

The treatment of the attack itself consists of administering repeated doses of analgesic drugs, such as cannabis indica, phenacetine, aspirin, bromides, allonal, and the like in sufficient dosage to keep the patient comfortable.

CASE-REPORTS

CASE 1.—Mrs. L. S. A., Multipara, aged 34. Headache and pain under right eye, right side of face and towards right ear. Pain present almost all the time for about fifteen years. Not so bad in summer. Upper teeth had been pulled without relief. Refraction: Right $+1.00 +.75$ Cyl. Axis 90; Left $+1.50 +.50$ Cyl. Axis 90= $20/20$ vision in both eyes. Nasal examination showed a small bony protuberance behind and above lower turbinate on right side. It did not press on adjoining structures. Removed by operation, followed by marked relief. This was followed by treatment with high-frequency vacuum tube for six days. Pain completely disappeared. This was about a year ago. Patient has been well and comfortable since.

CASE 2.—Mrs. L. P. J., aged 46. Multipara. Came to the office for consultation June 26, 1924. Gave history of frontal and temporal headache for the past fifteen years. Has treated with several physicians and referred to me by an osteopath, who treated her for months and who said he could do nothing for her. Eyes sensitive to light. Refraction resulted in prescribing: $+.25$ Cyl. Axis 90 on right eye and $+.25 +.25$ Cyl. Axis 90 on left eye. Medium shade tinted glass. Only slight relief of symptoms. Nasal examination negative; blood pressure normal. General autocondensation and local treatment with the high-frequency vacuum tube advised, and nineteen treatments were given covering a period of five weeks. Her headaches have completely disappeared, but she says she cannot get along without her glasses.

CASE 3.—Mr. E. S. Machinist, aged 33. Came to the office November 30, 1922, suffering with severe headache with history of severe attacks lasting from one to three days at the time. Sometimes once or twice a week; sometimes three weeks between attacks. It would usually start at 10 A. M. and last all day. Had to leave shop and go to bed when attacks came on. Has been wearing glasses for five years with but slight relief. Eyes sensitive to light. Refraction: Right $+1.50$ D. Sph. and left $+1.00$ D. Sph. Vision: $20/20$ each eye. One prism dipter hyperphoria corrected with prism base up on the left lens. Also medium tint prescribed. No relief. Examination of nose showed deflection of septum and mucous membrane congested. Submucous resection advised and done. There was immediate re-

lief of the headache. The patient was interviewed last Saturday and said he has been free from headache since the operation except once, six months later when he had acute coryza, during which time I saw him, which promptly subsided under local treatment.

CASE 4.—Mrs. A. T., aged 32. Multipara. Has had headache as far back as she can remember. Has used glasses since eleven years of age. Has had pain in right temple and right eye. Sometimes lasts a whole week, and she must stay in bed two or three days at the time. Sometimes vomits. Wears glasses 1.00 Sph. D. on Right eye; 1.50 Sph. D. on left. Glasses gave only partial relief but patient says she cannot get along without them. Nasal examination showed deflection of the septum and moderate engorgement of the turbinates. This patient when first seen about five years ago was advised to have a submucous resection of the septum. This was declined. The past two years the patient has been suffering with almost continuous tinnitus aurium. Submucous resection was urged because of this condition, and the operation was performed about five weeks ago. Two weeks later the patient reported she had been entirely free from ear symptoms and the headache for a whole week. A report from her dated January 10 (three days ago), 1926, states she is feeling fine; entirely free from the tinnitus and headache, and only hopes it will continue this way.

CASE 5.—Mr. H. M. R., aged 21. Farmer. On September 28, last fall, came to my office, complaining of headache and blurred vision. Eyes sensitive to light. Under homatropin cycloplegia the vision was 20/30 each eye, reduced to normal by a low astigmatic correction giving 20/20 vision each eye. About five weeks later patient appeared again at the office telling that his glasses had given relief of his symptoms at first, but his headaches had returned worse than ever and that he now saw double. Could not drive his own car, for he saw two roads and could not tell which one his car was on. Eyes very much congested. No apparent deviation of the eyes. Vision normal, each eye tested singly. Fundus examination showed right disc congested. A provisional diagnosis of congestion of the brain and possibly hemorrhage was made and the patient apprised of the possibility of serious complications. Hospitalization was advised, but declined. Bp. 128 over 80. Urinalysis, negative. Knee reflexes, increased. Autocondensation was given daily for a few days and potassium iodide in 10 gr. doses three times a day. On the second day there was a decided external deviation of the right eye followed two days later by internal strabismus. After three days the headache and congestion of the eyes began to clear up and about three days later single binocular vision with effort was attained. Two weeks later when treatment was discontinued he was feeling fine, but there was still a tendency to inward deviation of the right eye.

SOME OBSERVATIONS ON DIABETES, WITH SPECIAL REFERENCE TO THE REACTION OF THE DIABETIC PATIENT TO INSULIN

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MINNEAPOLIS, MINNESOTA

IN TWO PARTS—PART II

HYPOGLYCEMIA

Hypoglycemia is defined as a state of the blood where the percentage of reducing substances is below 0.075 per cent, which value may be taken as the lower limit reached by the blood-sugar in the normal person.

Since the introduction of Insulin this condition is much more frequently met with than previously, certain symptoms have been described as associated with hypoglycemia and the whole clinical picture has been called hypoglycemic attacks.

These terms, however, have only relative value, as the blood-sugar may be considerably below 0.075 per cent without any symptoms arising, and in other cases symptoms may arise with the blood-sugar above 0.1 per cent, as will be shown below.

How far hypoglycemia occurs in normal persons is not known to me, but it is generally stated

that the sugar-regulating mechanism of the body will keep the blood-sugar within the normal limits even on long-lasting starvation. Diabetics, especially (or exclusively) the slight cases, may become hypoglycemic on starvation, on certain diets, and practically always on the administration of Insulin.

It is the Insulin hypoglycemia which gives rise to symptoms. How far hypoglycemia due to other causes than Insulin may give rise to similar symptoms is very doubtful.

There is a recognized mode of death in diabetes, called "the diabetic collapse," which is supposed to be due to heart failure, and which to a certain extent resembles severe Insulin hypoglycemia.

In our clinic there has been one case of death from this cause, a description of which is given below for comparison with the Insulin hypoglycemia later described:

F. W. S., aged 35. Onset of diabetes four years ago. Very weak and emaciated on admission. Fasting blood-sugar on September 8th was 0.187, and on the 11th it was 0.056 per cent. Started in with the usual starvation scheme. On the 12th of September at 6:30 a. m. he became strange in manners. At seven his blood-sugar was 0.056. At 7:30 he was collapsed with thready pulse. He was unconscious, pale, his eyes were wide open, and there was an internal squint of the left eye. His limbs were stiff and cold. Breathing was not labored. He was given 3 ounces of glucose in solution and 1 c.c. of Insulin subcutaneously. A short time after he seemed to recover a little. He turned his head, moved his eyelids, began to groan, also his legs were moved a little. One hour after he was much worse; 1 c.c. of Insulin was given without any effect; his breathing became more disturbed; and he died at 10 A. M. Post-mortem examination revealed nothing beyond the usual findings in very emaciated diabetics.

The hypoglycemic attacks so commonly occurring during the ordinary Insulin treatment usually take place two or three hours after the meals preceded by Insulin, especially late in the afternoon, after the second Insulin dose. They are rare at other times of the day.

The blood-sugar levels at which the symptoms occur are subject to certain variations. Patients have been known to be unconscious with hypoglycemia with a blood-sugar of 0.035, 0.073 and 0.56 per cent, and other hypoglycemic symptoms have been associated with a blood-sugar of 0.037, 0.056, 0.060, 0.080, and even 0.110 per cent. On the other hand low blood-sugars have sometimes been found without any symptoms arising; the lowest value recorded in the hospital is 0.037 per cent, which has been recorded on two different occasions; other low values unassociated with symptoms are 0.073, 0.056, and 0.043 per cent.

It was thought that this feature was due to the patients being accustomed to a low blood-sugar, and this suggestion was confirmed by the fact that the above-mentioned patient with a fasting blood-sugar of 0.043 per cent habitually had a fasting blood-sugar between 0.050 per cent and 0.060 per cent. The patient who showed a hypoglycemia with a blood-sugar of 0.110 per cent had the same morning had a fasting blood-sugar of 0.181 per cent.

Another patient showed the following condition:

On November the 24th he had moderate hypoglycemic symptoms with a blood-sugar of 0.037 per cent. On the 26th he was found to be quite well on a fasting blood-sugar of 0.037 per cent, but at 1 P. M. he was found to be unconscious, presenting a typical picture of severe hypoglycemia. His blood-sugar was then found to be 0.073 per cent. He had had dinner preceded

by Insulin one hour previously. The theory advanced to explain this paradoxical condition was that it might have been the rapid fall of the blood-sugar after the last Insulin dose that had acted as a shock to the organism before the dinner could be absorbed from the alimentary canal. The reason why clinical hypoglycemia is practically unknown in non-Insulin cases should be that physiological adjustment must be supposed to take place more gradually, thus avoiding the shock factor.

It was found, however, that one patient had had a fasting blood-sugar one day of 0.256 per cent, and two days after of 0.093 per cent (he was not given Insulin, and his diet was not altered), and another showed in the same way 0.237 per cent and 0.056 per cent. (Non-Insulin case), starvation day between the two readings. Neither of these two cases showed any sign of hypoglycemia in spite of the rapid drop in the blood-sugar.

Still more remarkable were the conditions met with in a case treated with Insulin for diabetic coma. Fig. 18 shows various values of his blood-sugar during and after coma. At no time during this period was there any clinical evidence of hypoglycemia. As far as one can judge from this case it seems that big and sudden falls may take place in the blood-sugar without any symptoms arising, and the evidence in our cases has far from confirmed the view that it should be either the absolute value of the blood-sugar or the rapid drop that is the directly exciting cause of the hypoglycemic symptoms.

Various symptoms have been described as due to overdosing with Insulin or as features of hypoglycemia. In our patients treated with Insulin we have met with three kinds of symptoms which it has often been difficult or impossible to distinguish from each other. There are the symptoms which would also have occurred had the patient not been on Insulin treatment, either as a complication of diabetes or otherwise. Secondly, there are the additional direct effects of Insulin, the so-called complications, and, lastly, there are the symptoms directly due to the state of hypoglycemia, which will be discussed in this place as far as they have been observed by us.

The very mildest symptom of hypoglycemia is a feeling of hunger. It is never treated by us except perhaps by adding a few ounces of vegetables to the diet. If the hypoglycemia becomes a little more severe, it is often the mental symptoms that are predominating: the patient feels strange, as if he was far away or as if something unusual was going to happen to him; or he

may do silly things without any reason, for instance, carry the other patients' food away. Or there may be profuse sweating all over the body.

This first stage may gradually pass into a second, where the patient becomes increasingly more drowsy; at first he is easily roused, but he will then often appear mentally confused and often give rude or irrelevant answers, as if he were drunk. Later he cannot be roused and sinks into absolute stupor.

Another definite group is the motor symptoms. In the first stage there is often a certain amount of trembling associated with the fear and mental alienation. In the more severe hypoglycemia this gives way to a motor weakness; there is a feeling of loss of control, not only of the limbs, but also of the speech and of the eye muscles causing squinting and diplopia which symptoms may be the last ones to disappear when the patient recovers. At the height of an attack the patient presents a most striking picture with his head hanging down on the pillow, the eyes staring without expression, the tongue hanging out of the slobbering mouth with the lips hanging down. The skin is, as a rule, cold, pale, and clammy, but general vasomotor dilatation has been observed.

If the state is allowed to go still further the patient will pass into stupor without any symptoms of motor disturbance; but these may occur either before stupor or when he is getting out of this condition. They then take the form of tonic contractions of certain muscles or groups of muscles: half the face may be screwed up or they may extend to one half of the body, and in one case there were typical athetoid movements of the left arm whilst the right side was held strictly rigid. On the whole the symptoms of severe hypoglycemia often show a tendency to severe asymmetry.

The respiration which, in most cases, is shallow and rapid, may occasionally be deep and heaving.

If the patient is allowed to progress in his hypoglycemia past the stage of stupor, the well-known twitches occur, but these have only been noticed once to a slight extent in one of our very first cases of hypoglycemia.

The treatment of this condition is quite simple and well known; in the milder cases the patient is given sugar in solution to drink, and, if he is unconscious, a nasal tube is passed, and the sugar is given in this way. The clinical improvement always takes place fairly rapidly (five to fifteen minutes) after the administration of sugar, only in a few very severe cases did it last

half an hour to an hour. In these cases we also availed ourselves of adrenalin to increase the blood-sugar.

COMPLICATIONS OF INSULIN TREATMENT

It must now be considered beyond doubt that, besides the beneficial effect Insulin has on the various pathological features of diabetes, it may in itself give rise to a number of symptoms. Some of these may be considered results of over-action on the recognized diabetic symptoms, as the changing of hyperglycemia into hypoglycemia, acidosis into alkalosis etc., thus producing the symptoms associated with these conditions. Others can be described as direct toxic effects, either of the Insulin itself or of the substances injected along with it. We have only been able to observe a few of the symptoms without being able to form any opinion as to the nature of the underlying pathological condition.

LOCAL REACTIONS

Acute local reactions were observed in one or two cases. They were simple inflammatory swellings, tender but lasting only for a day or two. In the case where the reaction was most marked, it occurred about a week after commencing the Insulin injections. After another week the injections became gradually less severe and finally disappeared altogether. No treatment was necessary. The Insulin used at the time was the Lilly Insulin ("pure Insulin"). The makers of the British Insulin ("Insulin chloride") maintain that the chloride compounds do not cause local reactions, and certainly none have been observed after Insulin chloride.

The chronic reactions are small cutaneous or subcutaneous circumscribed, painless areas of fibrosis. They are especially noticed on the arms of patients who have been having Insulin for some time, and they often make it very difficult to continue the injections in the areas affected, as they are apt to bend the needles. If the area is rested and the injections performed elsewhere in the body the condition clears up after a few weeks.

The site of the injection sometimes becomes infected in spite of the greatest care. In our cases it happened twice, and in both cases the patients were very intelligent and fully understood the importance of asepsis. Actual abscess formation has never been seen in any case under our care. It has been known to occur in other places, especially where the Insulin was distributed, not in phials as in this country, but in tabloids, the sterility of which is far from certain.

Fig. 18

Attack of diabetic coma treated with massive doses of Insulin. There was no symptoms of hypoglycemia at any time.

Date	Time	Units of Insulin	Blood-sugar percentage	Remarks
Sept. 17	8:00 a. m.		0.408	In coma
	8:10	20		
	9:00		0.243	
	9:10	20		
	9:55		0.243	
	11:50	20		
	12:40 p. m.		0.300	
	12:45	20		
	2:15	20		
	2:20		0.326	
	3:00	20		
	4:00	20		
	4:20		0.408	
	6:00	40		
	6:45			
	7:30	20		
	9:00	20		
	10:00	20		
	11:00	20		
	12:00	20		
Sept. 18	1:00 a. m.	20		Digitalin, gr. 1/100
	2:00	20		
	3:00	20		
	4:00	20		
	5:30			Digitalin, gr. 1/100
	6:00	20		
	7:00	20		Clinical improvement
	10:45	20		
	11:45	20		
	12:45 p. m.			
	1:00		0.134	60 grammes of sugar by mouth
	7:00		0.037	
	8:20 a. m.		0.231	
Sept. 19	11:00	10		
Sept. 20	3:00 p. m.		0.306	
	8:00 a. m.		0.206	
Sept. 21	4:00 p. m.	20		
	1:30 a. m.		0.312	Worse (air-hunger, drowsiness)
	3:00	20		
	4:00	20		
	6:00	40		Some improvement
	8:00		0.312	
	8:30	40		
	9:45	40		
	10:45	40		
	11:00		0.456	Still improving (in spite of blood-sugar)
	12:45 p. m.	40		
	2:15		0.293	
	7:45		0.212	
	9:15	20		Peacefully asleep. Breathing normal

GENERAL COMPLICATIONS

Of all the complications met with in Insulin treatment, the pains are the worst. They are decidedly different from the pains associated with peripheral neuritis. A patient who had had both, described the latter as a dull aching pain, while the Insulin pain is sharp, shooting in character, and, in the case in question, described as much more troublesome. The patient may get them from a few days to several months after he has started Insulin, and a couple of our cases were doing extremely well on the Insulin treatment until the pains began, but from this time their condition deteriorated, and the question of their treatment became an extremely difficult one. The pains may start in any part of the body, either in the site of the Insulin injection immediately after it has taken place, or corresponding to a particular nerve, like the left supraorbital or the mandibular, or some other part of the body (chest, back, feet, etc.), and they may spread from these to the rest of the body, and in these

generalized cases it has been the hands and feet that have been worst affected. The pain may last from one-half to a couple of hours or still longer, in some cases being constantly present. These cases with severe and constant pain deteriorate very quickly, lose their spirits, their weights go down, and it often becomes difficult to continue the Insulin. In two cases we even had to stop it.

The milder forms of this complaint yield to aspirin and other common analgesics, and moderately severe cases do well on massage and electrical treatment, and the patients become again perfectly fit and able to continue their Insulin, but the very severe cases are most refractory to all analgesic treatment known to us. We have tried to change the make of Insulin from A.B. to Borroughs, Wellcome and Co.'s without any effect, and the pains were only relieved by stopping the Insulin altogether. No objective signs of nervous lesions have been demonstrated in this class of case.

Another important group of symptoms are the mental ones. These are sometimes met with in hypoglycemia, but the following case seems to have been one of purely toxic hallucinations:

A very emaciated patient had for about seven weeks been doing very well on Insulin when for a few evenings running he had a fairly severe hypoglycemia as a result of which the Insulin dose was decreased. The hypoglycemic attacks persisted in spite of this, and one night he was still somewhat wandering and had difficulty with micturition for an hour after he had otherwise recovered from his attack. The Insulin was therefore stopped and no more given for the following six weeks. The day afterward his blood-sugar was 0.18 per cent, but he was at intervals confused believing he had been moved to another ward or hospital, that his watch was going backwards, etc. Sometimes he was emotional and childish in his thoughts and behaviour, and occasionally he had attacks of twitching and frothing at the mouth lasting for a short while. Once he vomited and there was incontinence of urine and feces. In the course of about ten days his condition gradually cleared up, and apart from a single attack of twitchings of his face, falling down of his jaw, and screwing up of his eyes, accompanied by hallucinations when he woke up about ten minutes later, he was fairly well again. But he gradually lost his appetite and went downhill in spite of all efforts. Having been mentally fairly normal for four weeks, he was tentatively given two and one-half units of Insulin with the result that he again became seriously confused. Insulin was therefore not continued, and he died a few days later.

Another very intelligent patient had a blood-sugar of 0.336 per cent, when he experienced the following visual disturbance: if he did not fix on objects they seemed to move about, and if he did fix on them they seemed to disappear altogether. Both eyes were affected. At the same time he had motor aphasia for soft sounds ("Sister"), but not for hard ones ("Rough"). He also had amnesia (could not remember why he had called the orderly nor the name of cream) as distinct from his aphasia. There was left supraorbital pain and right mandibular pain, but no other symptoms. This condition lasted for about one hour, after which it spontaneously cleared up not to return. The patient stated that he had had a similar attack about five months previously with a blood-sugar of 0.2 per cent.

A few patients have complained of occasional headaches after Insulin, but not so persistently that one could describe a definite relationship between the two.

One patient suffered from a generalized urticarial rash coming out about one hour after an injection of Insulin and fading away during the next few hours. It was slightly itching but not associated with rise of temperature or any other

constitutional disturbance. It did not occur after subsequent injections.

Hematuria has been mentioned as a complication of Insulin treatment. We have had two cases of hematuria, of which one was in an Insulin patient. It was perfectly uncomplicated and lasted on and off for about fourteen days. In spite of careful investigation no cause could be found to account for it, and the patient gave a definite story of having had a similar attack some years before. The other case was a non-Insulin patient who had profuse hematuria for one hour only. He had all the time been complaining of an indefinite pain in his back, and there was an occasional trace of albumin and hyaline cast in his urine, but neither in this case was any definite cause to be found in spite of careful search. We are, therefore, far from convinced that hematuria is an Insulin complication.

One patient, a very severe case of diabetes complicated by nephritis, had been on Insulin for about nine days. Towards the end of this period he began to suffer from increasing abdominal distension and discomfort aggravated by taking food. On palpation his stomach was felt to be very distended. During the night preceding the tenth day he had a severe attack of vomiting and brought up about four pints of dirty-brown fluid containing semidigested food, after which he improved considerably. He was discharged for private reasons soon after without more Insulin being given. A very similar occurrence took place in a case where no Insulin had been administered, so neither in this case is there any definite relation between the two.

Edematous swellings have been a common occurrence. They were mostly asymmetrical and were found in the dependent parts, in the feet and legs of patients who were up, and in patients in bed the posterior parts of the thighs and the scrotum were the parts affected. In a patient who was half sitting up in bed because of aspiration pneumonia it appeared like two almost lipomatous sausages around the lower part of the posterior surface of the chest, more on the left side, giving rise to considerable diagnostic difficulty.

The swellings came on five days to two months after the first administration of Insulin: In but one case did the patient have swellings before giving Insulin. The edema was aggravated after the administration of the drug. There was in this case an increase of weight amounting to fifteen pounds during one week, which was far in excess of what could be explained by the

swelling of the legs, which was only slight. As the patient was on a very small diet at the time and as in several other cases swelling of the feet had been associated with an excessive and otherwise unexplained increase in weight it was thought that what really occurs is a generalized edema.

The duration of the swelling varied from a few days to a month, after which it gradually disappeared. It was apparently not influenced by any kind of treatment: rest, restriction of fluids, salt-free diet, strapping, lemon juice, or digitalis. As a rule the swellings were painless,

but sometimes they were associated with a deep-seated, dull-aching pain, and in one case there were extensive ecchymoses of both legs lasting for a couple of days. There were no signs of cardiac or renal failure, and the sugar-tolerance, as well as the general well-being of the patients, was unaffected.

In Lund, in Professor Petren's clinic similar swellings have been demonstrated to be due to a state of alkalosis comparable to the swellings occurring after the administration of big doses of sodium bicarbonate, and also sometimes in the course of oatmeal cures.

MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART I Continued

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MINNEAPOLIS, MINNESOTA

II. HISTORY OF THE TREATMENT OF TUBERCULOSIS

DIET

Perhaps because of the emaciated condition of patients treated, diet was stressed by the ancient physicians. Galen advocated milk in the treatment of most cases of consumption. Cow's milk he believed to be good, but better than this was the milk of goats and asses, and, best of all, was human milk. Areteus, living at about the same time, said, "Often milk alone sufficeth in place of all food. For milk is pleasant to take, is easy to drink, gives solid nourishment, and is more familiar than any other food to one from a child. In color it is pleasant to see; as a medicine it seems to lubricate the windpipe, to clean, as if with a feather, the bronchi, and to bring off phlegm, improve the breathing, and facilitate the discharges downward. To ulcers it is a sweet medicine and milder than anything else. If one, then, will drink plenty of this, he will not stand in need of anything else. For it is a good thing that, in a disease, milk should prove both food and medicine * * *." Areteus was of the opinion also that eggs play an important part in the treatment of consumption. He believed they should be newly laid, placed in the fire long enough to become hot but eaten while in a liquid state. Celsus said: "Soon as a man finds himself spitting and hacking on rising in the morning, he should immediately take possession of a

cow and go high up into the mountains, and live on the fruit of that cow."

Thus during and since the time of the ancient physicians, milk and eggs have constituted important parts of the diets of consumptives. Frequently, even to-day, after giving a diagnosis of tuberculosis some relatives of the patient will insist that the physician place great emphasis upon the milk and egg diet, and we often see physicians prescribe milk and eggs even to patients who have great difficulty in taking them. In this connection Krause says, "I have met a man who told me that, according to prescription, he had eaten over fifteen thousand raw eggs of actual record in treating his tuberculosis. It should surely interest some present students and advocates of special diets that almost two thousand years ago the merits of milk were described with a fervor that stands unexcelled."

That Galen did not always prescribe milk is evidenced by the following which Krause quotes: "I did not bleed her, as she had fasted for four days on account of the catarrh; but I ordered an active enema. I had her legs and arms rubbed and tied, and her head shaved, and covered with pigeon's dung. I then ordered the bath, desiring her to be well clothed after it, and to take some austere wine with fruit and some drinks, and a mild opiate before she slept. It appeared that her lungs still wanted cleaning; but I suffered her to remain at rest through the day, only employing frictions and giving an opiate at night.

The next day she took some boiled honey and cream of ptisan, and the frictions were repeated. This system was repeated, with proper alterations, for some days, and the patient recovered without the use of milk."

BLEEDING

One of the most common methods of treating diseases in early times was bleeding. Even Galen practiced it in consumption, and since he was the authority in medicine for more than 1500 years to follow, bleeding was practiced extensively during all of this time and even longer. It is difficult to imagine anything more disastrous to an emaciated anemic consumptive. Yet, even to-day, one learns occasionally of a physician practicing this ancient method not founded on reason.

CHANGE OF CLIMATE AND ALTITUDE

The ancient physicians treated most of their consumptives in rooms where the windows were kept closed, and sand bags were used to cover any chinks which permitted the entrance of air. However, patients financially able to do so were advised by Galen and Areteus to seek certain climatic changes. For example, Galen sent patients to Stabiæ, a hill some three miles from the Bay of Naples, where the air was dry. Areteus said: "Living on the sea will be beneficial. For the sea-water contributes something desiccant to the ulcers." Ever since those ancient days change of climate and altitude have been recommended to patients suffering from tuberculosis, and it was not until very recent times that the approximate values of climate and altitude have been ascertained.

DRUGS

Hippocrates used tar quite extensively in the treatment of phthisis. Galen makes special mention of the use of opiates and emetics. Many other remedies were in use such as severe irritants applied to the skin. Many employed drugs causing severe purging. From ancient times to the present time, drug after drug has been employed until few if any remain that have not had a trial. Indeed as early as 1720 Marten said: "Of all the Distempers that afflict Mankind, there's not one, for the Cure of which more Remedies have been appropriated and invented than for a Phthisis, or Consumption of the Lungs."

SANATORIUM AND HOSPITAL TREATMENT

Although open-air treatment was practiced in Scotland about 1747, and a seaside hospital was established for scrofulous patients at Margate in 1791, it was not until about 1830 that George

Bodington, of Warwickshire, England, opened the first sanatorium for the treatment of tuberculosis. Bodington was far in advance of his time, and, although his views were logical and for the most part coincide with the accepted views of to-day, he met with bitter opposition among his contemporaries. He believed in the use of cold, dry air, open-air exercises, and plenty of food. "Fresh air to make the patient breathe," he taught, "good wine to bring down his pulse, a good dinner to make him fat, and an opium pill to make him sleep." So fierce was the opposition to Bodington's sanatorium that he was compelled to close it. Later it was opened as an insane asylum.

After Rokitansky found such a high percentage of those who had not died of tuberculosis to have healed tuberculous lesions in their lungs, Brehmer was convinced that, if healing occurs spontaneously in so many, special treatment should bring healing in some who otherwise were doomed to death. Therefore, in 1853, he said: "Tuberculosis is curable," but it was not until 1858 that he established a sanatorium at Gorbardsdorf, Germany. Brehmer was able to overcome the opposition to his sanatorium which still receives patients. At this time it was generally believed that tuberculosis was always fatal, quite likely because then the disease was usually recognized only in the advanced stage. In speaking of Brehmer's sanatorium, Kinghorn says: "The beginning was very hard. He began with a few patients, with one cow to furnish milk for them, and a lean horse to fetch coal from a distant place and patients from the station. The establishment consisted of a modest little cottage. For some time he had great trouble to keep the sheriff from taking the cow and horse, so hard was it for him to make both ends meet. After a few years, however, his work became known, and physicians and patients flocked to Gorbardsdorf to be taught and treated by him."

Brehmer believed that certain localities existed which were "immune" to tuberculosis and that patients should be treated only in such localities. He thought that much depends upon the amount of food tuberculous patients take. Therefore, he advocated forced feeding. It was Brehmer who introduced the open-air treatment of tuberculosis, although he did not employ it in the same way as we do at the present time. Before his time it was believed that night air is harmful, but he insisted that this was not true. He taught that patients should spend most of their time either walking or driving in the open air. The taking of temperature regularly and at two-hour

intervals also was first recommended and practiced by Brehmer. Thus we see that Brehmer did much to advance our knowledge of the treatment of tuberculosis. Although observation and investigation have proved that some of his views were not correct, he must always be looked upon as one of the pioneers in the modern treatment of this disease.

In the summer of 1868 there came to Brehmer's sanatorium a physician suffering from tuberculosis, Peter Dettweiler. Being a physician and a patient at the same time, Dettweiler had an unusual opportunity to observe and study the methods of Brehmer. Certain of these he found were not as effective in his own case as those which he devised himself. For example, instead of taking long walks and drives in the open air, as the other patients were doing, he found that he felt better while resting in bed or in an easy chair. When able to work he became second physician in the sanatorium from 1870 to 1875. As time passed some of his ideas concerning the treatment led to differences of opinion, and he left Brehmer's institution. In 1876 he became director of a sanatorium for the wealthy at Falkenstein. He was the first to establish a sanatorium for people in moderate financial circumstances. Dettweiler brought the treatment of tuberculosis much nearer our present-day methods; indeed, it was he who introduced the principle of rest in the open air, established a definite sanatorium routine with the patients under medical supervision, and taught that climate and altitude play a very small part in the treatment but that patients may be cured anywhere and advocated proper and abundant food, but not forced feeding.

During the time the sanatorium was being developed in Germany, many in America were suffering and dying from tuberculosis. The Channing Home, in Boston, for consumptives had been established in 1857. In 1873 a young physician practicing in New York, with an unusually bright future, became afflicted with active pulmonary tuberculosis, which compelled him to give up his work and the future he had planned. However, this physician, E. L. Trudeau, who went to the Adirondack Mountains, lived a life of service there which is perhaps unexcelled by that of any other physician who has lived in this country. Thus "It is an ill wind that blows nobody good," for this physician was blown by an apparently ill wind from one channel which he had chosen to another which led to an open and wide sea of human service.

Doctor Trudeau did not go to the Adirondacks

to be cured, since few or none in this country then believed tuberculosis could be cured. He went there to visit and rest with an old friend. Upon arrival he was too weak to be up, but after resting in the open air a few days his appetite began to improve. Unconscious of their future significance, he was employing the three leading factors which have been used in this country in the treatment of tuberculosis from that time to this, namely, rest, good food, and good ventilation.

On this treatment his symptoms began to abate and his strength to return. But, like many others, both before and since his time, Trudeau got a false sense of security from temporary improvement, gave up the treatment, and returned to his home only to relapse soon afterward. Then he was sent to Saint Paul, Minnesota, at that time considered to possess an unexcelled climate for consumptives; but for lack of knowledge of the treatment of this disease, Doctor Trudeau's condition gradually became worse. Then he developed a longing for the Adirondacks where he had done so well before. Upon his return there and under the rest, food, and air treatment, he began again to improve. While Trudeau was fighting this terrible battle for life and was learning the important factors in the successful treatment of tuberculosis Brehmer and Dettweiler, particularly the latter, were learning and applying the same facts in Germany.

It was in 1882, while reading the *English Practitioner*, that Trudeau's eyes fell upon an account of Brehmer's Sanatorium. The methods used there so closely approached his own methods, and the results were so gratifying, that he conceived the idea of building a sanatorium in America. At that time only a person with great patience, far vision, and a burning desire to help suffering humanity would undertake such an accomplishment. He succeeded. But little did he guess when his sanatorium with a two-bed capacity first opened its doors in 1885 that in less than forty years 600 such institutions patterned after his own and relieving 66,000 sufferers at one time, would be scattered throughout this country. Little did he know of the world-wide fame that was to come to his institution because of the splendid clinical and scientific work done by himself, his colleagues, and his successors.

Although a private hospital for the tuberculous had been established as early as 1875, it was not until twelve years after Trudeau's sanatorium opened its doors that the first municipal hospital for poor consumptives was established at Cincinnati, Ohio. One year later Massachusetts

built the first State sanatorium at Rutland. Although many sanatoriums have been built since that time and many more are in the process of construction, there still is a great demand for beds for tuberculous patients.

The American Sanatorium Association, organized in 1905, with a membership consisting only of those who are members of the National Tuberculosis Association, has done much to stand-

ardize the classification and treatment of tuberculosis in this country.

Thus the three pioneer workers in sanatorium history, Brehmer, Dettweiler, and Trudeau, sowed seeds which sprang up and brought forth unthought-of harvests and which, we hope, will continue to bring forth many more of their kind.

[To be continued]

ALVEOLAR FOCI OF INFECTION AND THEIR CONSERVATIVE SURGICAL TREATMENT

By E. M. STANSBURY, B.Sc., M.D.

VERMILION, SOUTH DAKOTA

Mr. E. C., aged 45 years, a junk buyer. Previous history, unimportant.

On October 2, 1925, he was unloading an old junk plow from the rear end of a truck. The beam of the plow caught his jacket and pulled him off the truck and caused him to fall on the plow-share, the point of which entered the abdomen about two inches below the umbilicus, making a cross-section of the right rectus abdominus muscle, and pointing upwards, backwards, and inwards, striking the back-bone.

The patient pulled himself off the plow and immediately the intestines came out through the wound. He gathered the exposed viscera in his extremely begrimed hands and walked across the lot to his house where he lay down on a bed, and a doctor was called. When the doctor arrived most of the intestines were outside the abdomen and badly messed up with very badly soiled clothing. Without any thorough cleansing of his own hands the doctor replaced the exuded intestines and placed a gauze pad over the wound.

An hour and a half later the injured man was brought to the Vermilion Hospital, where, after a urinalysis, revealing no trace of blood, ether was administered, and the abdomen was prepared and opened, and the usual search for injuries was made. The omentum was found protruding from the wound. This portion was very dirty and was ligated and removed. A further search revealed no injury to the bladder or the ureters. But it was found that two holes were cut in the ileum at about its central point. One was about two inches long and the other about one inch in length. Through these holes the bowel contents had been discharged very freely into the peritoneal cavity. Several loops of intestine had

severe abrasions on the peritoneal surface, being intensely tattooed with the rust from the old plow-share. These spots, of course, could not be satisfactorily cleansed.

The holes in the ileum were repaired, and the abdomen was cleansed mechanically by removing tufts of hair carried from the abdominal skin, a few particles of clothing, much bowel contents, and some blood clots. After this the whole peritoneal cavity with its contained viscera was washed out three times with physiological salt solution. A tube drain was placed to the bottom of the pelvis, and a cigarette drain was placed to the vicinity of the repaired ileum. The abdominal wall was closed as usual around these drainage tubes. Débridement was done to the injured portion of the abdominal wall. Five thousand units of antitetanic serum was given, the patient was placed in bed, and immediately sedative absorbent diathermy treatment was given through the entire abdomen for one hour. This treatment was given before the patient was awake from the ether. After this the treatment was given twice daily for the first five days, and once daily (thirty minutes of treatment) for the next five days.

After the first three treatments the line of incision was avoided in the treatment in order that the great absorbent effect of the diathermy might not prevent the formation of a firm scar. The Fowler position was maintained, and physiological salt solution was given per rectum. On the second day one diathermy treatment was given through the chest, which is our custom for the prevention of ether bronchitis or pneumonia. Daily, gradually increased doses of mercury quartz light were given for the stimulating effect.

This applied only to the front of the chest and legs because of the inconvenience of turning the patient.

The postoperative treatment of this man was watched personally by Dr. J. C. Ohlmacher, Prof. of Pathology and Bacteriology, University of South Dakota, and Dr. J. H. Sayer, of Seattle, Wash. Dr. Sayer was a major in the U. S. Army M. C. in charge of the Ford ambulance service of the A. E. F. and served throughout the American participation, being on the front all through the war. He is, therefore, unusually familiar with the usual outcome and postoperative history of such cases.

The following is the daily pulse and temperature record, with all the important notes added: The recovery was essentially the same as if the patient had had a clean operation for appendicitis.

October 2, 1925 the patient entered Vermilion Hospital. Operation began at 8:50 P. M.

October 3, A. M. temperature, 101°; pulse, 108. The P. M. record was temperature, 101°; pulse, 112.

October 4, A. M. temperature, 101.6°; pulse, 106. Abdomen, somewhat distended. Dressings, stained only with serum; no pus; no odor. P. M. temperature, 101.4°; pulse, 78.

October 5, A. M. temperature, 99.4°; pulse, 63. P. M. temperature, 100°; pulse, 63. Abdomen, quite distended in morning. In afternoon much flatus was expelled naturally and unaided.

October 6, A. M. temperature, 99.4°; pulse, 60. P. M. temperature, 99.6°; pulse, 58.

October 7, A. M. temperature, 99.4°; pulse, 60. P. M. temperature, 99.6°; pulse, 57. Abdomen, flat and soft. Only serum stains on dressings. Transparent serum flowed from wound as the tube drain was partly removed.

There was absolutely no odor to the discharged fluid nor on the dressings.

On October 8 and thereafter the temperature and pulse remained normal all day, and the abdomen has remained flat ever since the fifth day of October, or the third day of the convalescence. The patient sat up in a chair on the twelfth day after operation, and went home on the seventeenth day after his injury, with the drainage end of the wound not quite closed.

COMMENTS

The writer served on the surgical staff of one of the base hospitals in the A. E. F. There and in civil life he has cared for a considerable number of abdominal injuries; but as yet he has never seen nor heard of a case of this type that made a complete recovery without developing pus and peritonitis with foul, odorous discharges upon the dressings. This case did not develop any peritonitis that could be recognized; nor did pus or odor develop within the abdomen. Even the gauze strips within the drainage tubes appeared clean and were absolutely free from odor on the sixth day, when they were removed along with the tubes. As far as we know, this is the first case on record where diathermy has been thus used immediately following operation and as part of the after-treatment of abdominal injuries, for the purpose of preventing and aborting peritonitis.

For explanation of the principles of this therapy, we refer the reader to Dr. C. M. Sampson's book, "Physiotherapy Technic," published by C. V. Mosby Co.

More than a year ago we began using diathermy through the lungs of all patients that have taken ether for a major operation. These treatments are given twelve and twenty-four hours after operation. Since doing this we have never had the slightest chest complication following ether. We have used diathermy immediately following surgical treatment of all industrial wounds with the result that for more than a year we have not had a wound inflammation develop in a case that received this treatment promptly after injury. These results led us to try the diathermy treatment in the abdominal injury here described. The results are almost unbelievable. If these results can be regularly duplicated, it means a revolution in our methods of after-treatment in abdominal and other injuries where no contra-indication to diathermy exists. This improved method will give much hope to the heretofore almost hopeless cases where inflammation (infection) cannot otherwise be controlled.

We think we can see the dawn of a new era in surgical after-treatment of abdominal injuries. We appeal to every surgeon who treats such cases to try this method, being careful to use the proper technic in every step of its application. Only the sedative, absorbent diathermy technic should be used. The machine should be a perfectly resonant high-voltage machine. All cases thus treated should be reported.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of January 13, 1926

The Minnesota Academy of Medicine held its regular monthly meeting at the Town and Country Club on Wednesday evening, January 13, 1926, at 8 o'clock. There were 35 members and 2 visitors present.

The meeting was called to order by the President, Dr. H. L. Ulrich.

Upon ballot the following men were elected to Associate Membership in the Academy:

Dr. H. F. Helmholz, Rochester.

Dr. Donald C. Balfour, Rochester.

Dr. H. Z. Giffin, Rochester.

Dr. Arnold Schwyzer (St. Paul) reported a case.

Dr. F. R. Wright (Minneapolis) read a paper entitled "Suprapubic Cystotomy."

DISCUSSION

DR. GILBERT THOMAS: I think Dr. Wright has covered the subject very thoroughly. The historical part of his paper is very interesting and I am glad to know that history reveals that urology has been a specialty for many hundreds of years. When one attempts to do a suprapubic cystotomy, in spite of the greatest care, the peritoneum is occasionally opened. This occurs not only when cutting, but when the peritoneum is packed away too roughly. This is not a serious complication to suprapubic cystotomy providing the peritoneum is quickly repaired.

DR. WRIGHT: The reason why I sew the bladder to the aponeurosis is because if you use a plain drainage tube it is easily displaced and it is almost impossible to replace it if the bladder is not attached to the abdominal wall. If the bladder is attached, however, and the tube comes out it can be replaced without difficulty. The bladder can easily be detached and replaced in the abdomen after the drainage is taken out by the use of either local anesthetic or H.M.C. anesthetic.

Dr. Wm. F. Braasch (Rochester) read a paper, and showed a number of lantern slides, on "Ureteral Obstruction."

DISCUSSION

DR. S. M. WHITE: In the clinic, with the fullest co-operation between the internist and the urologist, we have been able to study a very considerable number of these individuals complaining of abdominal and back pains, and attempt a solution of their problem. Some of them do have genuine ureteral disorders such as accompany pyelitis, pyelocystitis, ureteral calculus, etc., but we would demand more evidence than a "hang" with a wax bulb bougie before accepting the diagnosis of ureteral stricture. It is difficult for me to conceive of stricture without evidence of real dilatation above it. Much more

work by many trained men is needed. Dr. Braasch takes a very sound attitude in this connection. I heard Dr. Hunner's paper and was greatly interested in the subject, but think the time is not yet ripe to accept his conclusions in toto. The significance of a hang with the bougie, so far as it indicates stricture, can and will be solved with enough careful work such as that reported by Dr. Braasch. We certainly do not want to replace chronic appendicitis, the standby of the hasty diagnostician, with a new, easy and quick refuge in the ureteral field.

DR. A. R. COLVIN: There seems to be a good deal of doubt about the existence of the ureteral strictures which Dr. Hunner describes. Since finding a stricture of the ureter (postmortem) due to a very small localized tuberculous lesion of the ureter, I have wondered if it is not possible to have a stricture of the ureter due to localized infection of another character.

Regarding the dilated ureter without stricture, before the days of pyelography, I operated on a young man 25 or 26 years of age, who had very definite attacks of renal colic, and not being able to find anything in the kidney I examined the ureter and did find a greatly dilated ureter. I opened the ureter and passed quite a large rubber catheter down into the bladder and demonstrated the fact that he had no stricture. I wonder whether that conforms to the type Dr. Braasch spoke of as atony.

DR. GILBERT THOMAS: I have been tremendously interested in ureteral stricture. All urologists have to be interested in this subject whether they want to or not because it is being discussed so frequently in the literature. About two years ago I decided to try to find out how often ureteral stricture exists and if I could make a diagnosis when it did exist. First we tried wax bulbs during a great many examinations of both males and females. We did not get very far because the majority of patients had some "hang" with the bulb, which upon further examination did not prove to be a stricture. We did not accomplish much with this clinical examination, so then I tried to get some postmortem material. With the help of the Department of Pathology of the University of Minnesota, I was permitted to examine material from about 200 autopsies. Most of the autopsy material is drawn from the Twin Cities or the near neighborhood, so that I was sure, if I missed the diagnosis of stricture during the clinical examination, that a reasonable percentage should appear in the autopsy findings. I examined both kidneys, both ureters, and that section of the bladder where the ureters empty into it. As soon as possible following the autopsy I used wax bulbs and measured the ureteral diameter, and in only one instance did we find a ureteral stricture and that was unilateral. In addition to passing wax bulbs and measuring the ureter, pyelo-ureterograms were made in every instance.

Recently I saw a post-mortem specimen at the University Hospital which had dilated ureters on both sides. I am of the opinion that this is a congenital affair. The bladder section of the ureter in this case was not obstructed or narrowed so that

there was no mechanical reason for the large ureters.

It is rather difficult, when reading a pyelogram, to tell whether or not the ureter is dilated. I think that when a stricture is present one should always be able to demonstrate dilatation above.

If one introduces novocain into the ureter, one can frequently, by repeating the pyelogram, show that the supposed stricture was nothing more than spasm. This indicates to me that spasm accounts for the largest number of so-called strictures.

I would like Dr. Braasch to mention, in closing his discussion, any reason for the widening of the ureter that is so frequently seen just as the ureter enters the pelvis. This occurs in normal ureters very frequently.

DR. F. R. WRIGHT: My experience in this line of work has been decidedly limited. I had one peculiar experience: a woman who complained of pain in her left side. When I passed a catheter into her ureter the pain disappeared and has not returned. Her urine at all times was normal. I cannot conceive that this was due to stricture. The ureter is a very narrow organ. One stretching by passing a catheter will not cure or remove a stricture. If we pass a filiform bougie through a narrow stricture in the urethra the mucous membrane will swell and the patient may have an increased trouble for 24 or 48 hours. The men who report these ureteral strictures never report any later trouble. The patient is always relieved from pain. I do not believe it is due to stricture. It must be a spasm. It is barely possible that the passage of the bulb into the ureter can produce a spasm which can be felt. There is no reason to suppose that the catheter may not produce spasm the same as a bulb.

DR. H. L. ULRICH: I would like to ask Dr. Braasch about the intrinsic nerves of the ureters. The heart and the intestines all have intrinsic nerves which are connected with the spinal nervous system. Are the ureters connected to the splanchnic nerve in the pelvis? Is there not some central control?

DR. BRAASCH (closing): I am going to answer the last question first. It is well known that the heart, when removed from the body, will continue to beat for a long time; and, similarly, the ureter has an intrinsic nervous mechanism which has no relation to the central system. Dr. Colvin's question is answered by the fact that neither he nor any other pathologist has ever observed a pathological condition in the ureter which would correspond to Dr. Hunner's stricture. Several years ago I asked our Dr. Robertson to be on the lookout for this type of stricture and if he ever found one to call me at once, but he has not done so yet. The weakness of Dr. Hunner's stricture theory is that no pathologist has ever demonstrated the condition that he described clinically. Therefore one cannot help but think that the cause of the so-called "hang" is a spasmodic condition of the ureter and not actual constriction. On the other hand, it may be difficult to demonstrate actual spasm of the ureter. I am sorry that there are not some of the adherents of Dr. Hunner's theories here to defend him. They could demonstrate, to their own satisfaction at least, that there was a stricture present.

As a result of the stricture theory, hundreds of patients are being treated for stricture who, I fear, have none. It is open to question whether many

of them would not have just as much relief from massage, diathermy, or psychological treatment.

I am unable to explain the fusiform dilatation of the ureter in its pelvic portion, which Dr. Thomas asked about. The last word has not been said on this subject and I hope that my remarks will stimulate to farther investigation of the cause of this condition.

BOOK NOTICES

A NEW AND COMPLETE DICTIONARY OF TERMS USED IN MEDICINE, SURGERY, DENTISTRY, PHARMACY, CHEMISTRY, VETERINARY SCIENCE, NURSING, BIOLOGY AND KINDRED BRANCHES; WITH THE PRONUNCIATION, DERIVATION, AND DEFINITION. Thirteenth Edition, Revised and Enlarged. Edited by W. A. Newman Dorland, M.D., Large octavo of 1,344 pages with 338 illustrations, 141 in colors. Containing over 2,500 new words. Philadelphia and London: W. B. Saunders Company, 1925. Flexible binding, \$7.00 net; thumb index, \$7.50 net.

To one whose ears are sensitive to correct pronunciation there is much that offends the hearing while listening to the reading of papers and to the discussions of the average medical meeting. In town or country, in the East or the West, few doctors can talk for any length of time without making glaring mispronunciations. Indeed, there are some words that are pronounced incorrectly more often than not. Such a word is *abdo'men*, constantly called *ab'domen*, for which there is no respectable authority since it is a word taken over directly from the Latin, where the pronunciation is fixed by rule. If pronunciation were founded on ordinary usage as is claimed not infrequently, *ab'domen* would have to be recognized as proper. But it is the best usage that rules, and doctors are not high enough literary authorities to establish best usage. Those members of the medical profession who have acquired a literary reputation can be counted on the fingers: Smollet in the eighteenth century, Oliver Wendell Holmes, Weir Mitchell, and perhaps Conan Doyle in the twentieth—are there any others?

Ab'domen is taken as one of the most flagrant and common mispronunciations. Among the other examples frequently heard are *u'reter* for *ure'ter*, *ecze'ma* for *eczema*, *pare'sis* for *par'esis* and similarly *eme'sis*, *cocci* pronounced "cokki" instead of "coci," *cere'brum* instead of *cer'ebrium*, *ec'thyma* instead of *ecthy'ma*. There are many more.

If it is true that doctors pronounce badly, their spelling is even worse. The list of words commonly written wrong is a long one and is the despair of those who have the task of editing medical papers. Tonsilitis, accoustics, pubis, tympanitis, ocular, data—how often is the editor obliged to correct these into tonsillitis, acoustics, pubes, tympanites, ocular, datum, because they have been written wrongly. Sometimes the writer will go out of his way with a word like *diverticulum*, and, mistaking the plural form, *diverticula*, for the singular, will write *diverticulæ*, a plural of his own invention.

This diatribe on the literary weaknesses of the medical profession is to pave the way for asserting the importance of the medical dictionary on

the bookshelves of the doctor. Unfortunately, it is seen there but rarely, though it might well replace much that is found on those shelves. Apparently also it is but rarely consulted.

It must not be understood, however, that any medical dictionary will do. There have been many of these works published, some of which were not worth the paper on which they were printed, worse than no dictionary at all, because so full of mistakes that they could not be trusted, and likely to encourage error, instead of to correct it. It must require neither great skill nor great knowledge to publish a dictionary, and it should not be forgotten that finding a spelling or a pronunciation between the covers of a dictionary is far from conclusive evidence that that spelling or pronunciation is the best.

But those who acquire Dorland's work can feel safe in trusting it. It is taking the place long occupied by Dunglison's dictionary which was quoted almost exclusively in the early editions of Webster, and of Worcester, and it may be relied upon as an authority to-day, having been revised and re-copy-righted thirteen times in the twenty-six years since its first appearance. Nor is reliability its only merit. It is compact, clearly printed, and free from typographical errors. Moreover, its arrangement is such that only a short acquaintance is needed for its rapid use. For instance, the user learns quickly that if he wants to find, say *Hegar's* sign, he looks for *sign*, not for *Hegar*; similarly a law, a murmur, a duct, or a member of any group is to be sought for under the group name and not under the distinguishing title, this arrangement in groups contributing to the smallness of size and consequent ease of handling of the book.

—WM. DAVIS, M.D.

SYMPTOMS OF VISCERAL DISEASE: A Study of the Vegetative Nervous System in its Relationship to Clinical Medicine. By Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P. Third edition, with eighty-six text illustrations and ten color plates. Price \$6.50. St. Louis: C. V. Mosby Company, Publishers, 1925.

To the third edition of this valuable work there has been added material by the author concerning nerve stimulation, cellular activity, and ionic content.

Such discussion is stimulating and leads the reader to desire more information from the standpoint of the physiologist and biochemist that the clinical interpretation may be balanced with well established facts.

—C. A. MCKINLAY, M.D.

METHODS IN SURGERY. By Glover H. Copher, M.D. Instructor in Surgery, Washington University, St. Louis. Published in May, 1925, is a small volume of 230 pages and written especially for the convenience and help of internes and house surgeons.

It deals with the proper manner of history-taking, physical examination, rules for various departments, that is, x-ray and operating departments.

The various laboratory tests are described, including the newer ones, such as the sodium-tetradiodophenolphthalein test for gall-bladder visualization.

It also deals with preoperative and postoperative care of patients, separating them into various classes, that is, surgical, gynecological, neurosurgical, plastic, and genito-urinary.

Special diets are included for various conditions.

While this book is written especially for intrahospital use by internes, its pages contain a great amount of information useful to anyone doing surgery. It is brief in explanation, but explicit enough for practical purposes.

—RICHARD R. CRANMER, M.D.

THE DIAGNOSIS OF CHILDREN'S DISEASES, WITH SPECIAL ATTENTION TO THE DISEASES OF INFANCY. Translated by Carl Ahrendt Scherer. Cloth, \$7.00. Pp. 551 with 267 illustrations. Philadelphia: J. B. Lippincott Co., 1925.

This book gives a very complete, concise and well-outlined résumé of the ordinary diseases of children with special emphasis on the diseases peculiar to infants. The section of the book dealing with "The Nervous System" is especially good, taking up each of the various nervous disorders that prey upon the infant and child. Nothing is omitted that is essential in the differential diagnosis. Even full details of the spinal puncture, so essential in pediatrics, is clear and descriptively given.

This book is essential and excellent for the student and general practitioner who also treats children as well as the pediatrician who wants a truly scientific differentiation of the various diseases peculiar to children. One must not be disappointed, however, if one expects to find the treatment also included. Such is not the case since the book deals with diagnosis only, a fact which in reality is the most essential on the treating of any diseases scientifically and well.

—MARY H. JENNINGS, M.D.

OCULAR THERAPEUTICS. A Manual for the Student and the Practitioner. By Doctor Ernst Franke, A.O., Professor of Ophthalmology, University of Hamburg. Translated by Clarence Loeb, A.M., M.D., Oculist to the Michael Reese Hospital, Chicago. Cloth. Price, \$3.50. Pp. 183. St. Louis: C. V. Mosby Company, 1925.

Ocular Therapeutics is an invaluable addition to the ophthalmic surgeon's armamentarium. This is a manual embracing the entire field of ophthalmic therapeutics, comprehensively and concisely, in a style unusually simple and clear.

The author has seemingly included in this compact manner everything in use and has missed nothing of value.

Many things probably new to the American ophthalmologist are included, and comparative values in the older drugs and methods of treatment are mentioned briefly with an authority that comes only from a wide experience.

The chapters on syphilis and protein therapy especially should be mentioned, although in general the completeness with which the much-neglected field of ocular therapeutics has been covered, its thoroughness and detail, make this small manual unique and a rare aid to treatment.

This book is a ready reference, not a text-book and should not be so classed. It will find a greater field of service for that reason.

HERBERT H. THOMPSON, M.D.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations
The Hennepin County Medical Society
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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HERPES ZOSTER

One of the most annoying troubles which the general practitioner or the man in special medicine has to meet is the almost unexplainable development of herpes zoster, which is also called "a sensory cellular peripheral neuronitis." It has been defined as an inflammatory or irritative disease of the ganglia of the cranial nerves. Anyone who has seen a typical case will remember that it is characterized by pain and vascularization of the segmental domain of the root of the ganglion involved. That is to say it spreads over the distribution of either a spinal or cranial nerve root or ganglion which happens to be implicated.

This is a disease of ancient lineage which has been recognized for centuries. The Greeks called it "zona," the Romans called it "cingula," the English version is "shingles." Modern investigation of the pathology of the disease has given rise to the term "acute posterior poliomyelitis." Dr. Head, of London, calls it "acute posterior ganglionitis. The name in common use, "herpes zoster," is derived from two Greek words meaning to "creep" and to "girdle." The etiology is speculative, and the cause of many cases is still in doubt. There are, however, two large groups called the "essential" and the "symptomatic."

The infectious nature of the disease was first noticed in 1863. More recently it has been dem-

onstrated by Head, Campbell, Sundahl, Rosenthal, and Oftedahl as being of streptococcic origin. This organism has been isolated from the tonsils, sputum, spinal fluid, and pyorrheic abscesses, and doubtless comes from other infections, as well. The difficulty is in locating the origin of the infection, and although teeth and tonsils and sinuses are investigated herpes zoster goes on its usual course until it finally wears itself out. Sometimes this disease occurs in epidemics preceded by fever, malaise and chills, and followed by the typical skin eruption and pain. A relation seems to exist between the etiologic factor of chickenpox and that of herpes zoster. Goldberg and Francis record three cases having herpes zoster and chickenpox at the same time. Head, Corlett, Bokay, Richardson, and Riggs have recorded similar coincidences, as well as the occurrence of chickenpox in individuals exposed to herpes zoster. But, Dr. J. R. Graham, who has seen all the cases of chickenpox in individuals over sixteen years which have been reported to the New York Board of Health since January, 1915, stated that in five years he has never noticed any kind of coincidence between the two conditions. This last paragraph refers particularly to essential herpes zoster. The symptomatic herpes zoster has been studied by many observers, and they claim that various infections play a large part in the cause of the disease among which syphilis is the most conspicuous. Head and Campbell discovered this disease in two-thirds of their series, so that this statement would very properly suggest a careful Wassermann examination of the spinal fluid and blood. The newer literature is full of reports of occurrences of herpes zoster during infections, so that there is scarcely one of these which has not been brought into relationship with the disease. Among the infections mentioned are pneumonia, influenza, cerebrospinal meningitis, malaria, thyrid, pulmonary tuberculosis, and general sepsis. It may occur, too, among diseases of the spinal cord or the meninges, from diseases of the vertebrae, perhaps from poisons, notably arsenic and carbon monoxid. Among the metabolic diseases in which herpes zoster has occurred are diabetes, gout, and uremia, operations following the handling of the gasserian ganglion, kidney diseases, diseases of various viscera.

Obviously, exposure and exhaustion are not entitled to much consideration unless all these other possible causes are excluded. This disease occurs at almost any age, from childhood to old age. It is rather spectacular in its appearance and in its distribution, and is sometimes asso-

ciated with patchy loss of sensation involving almost any nerve.

What we are really most interested in is the treatment, and that is where we all clash and where all sorts of remedies are suggested. In the first place the search should be made for a removable or a treatable infection. Outside of that one is given a great latitude of possible remedies, including the cold-tar products, sodium nitrite, which, by the way, is not a very easy thing for many people to take comfortably, and the entire luetic and entire specific remedies. The vesicles should be kept intact as long as possible, and it may be very profitable to paint them with collodion in order to accomplish this purpose. If the vesicles rupture an ointment containing 1 per cent cocaine and lanolin may be tried. Dr. H. P. Jackson in *California and Western Medicine*, San Francisco, January 19, 1926, suggests the red-light treatment of herpes zoster. He tried it successfully on twelve cases and noted that there was a rapid involution of the lesions, usually beginning after the first exposition to the light. The process of complete involution is accomplished in a period of two to six days, depending on the severity and extent of the involvement. He thinks that the vesicles become desiccated, and loose adhering crusts separate and easily fall off. Dr. Jackson thinks, also, that this treatment causes an absolute arrest of the disease if the treatment is begun early and disease-scarring and pigmentation are lacking. The source of light is a 1,000-Watt red globe so adjusted that its rays strike the lesion in a perpendicular manner. The expositions are repeated daily until the lesions are completely involuted. Unless the patient's condition can be improved in a short time these people go from one thing to another and from one physician to another. They are told usually that the disease will last for many weeks, sometimes for months, in spite of any form of treatment, but they are not satisfied with this explanation and they think someone has something that will reach their case.

DR. GEORGE G. EITEL'S GIFT TO THE MEDICAL SCHOOL OF THE UNI- VERSITY OF MINNESOTA

Dr. George G. Eitel has given to the Medical School of the University of Minnesota the handsome sum of \$80,000. The gift is in the form of life-insurance policies payable at his death, with ample funds provided by Dr. Eitel to pay the remaining premiums. In a letter to President Lotus D. Coffman, of the University, Dr.

Eitel expresses the desire that his gift shall be "for the development of loan scholarships for the benefit of medical students." This means, we understand, for loans to medical students to help them complete their medical education. Thus an annual income of nearly \$5,000, plus all loans returned by student borrowers, is provided for, which amount may tide, not a few, but a good many, medical students over hard places in their medical-school days.

A wiser provision for the use of the gift could not be readily made.

In his letter to President Coffman, Dr. Eitel says his wife cordially supports the making of the gift; and, furthermore, that she suggested the plan for the expenditure of the gift to help medical students.

Dr. Eitel also expresses the desire that the gift be considered a part of the endowment fund of the Medical School which a special committee, of which Dr. R. O. Beard is executive secretary, is endeavoring to raise to meet the requirement made in a gift from the General Education Board.

Dr. Eitel also heartily endorses the plan to locate the City's General Hospital on the Campus of the University, in order to make the co-operation of the Medical School and the General Hospital of the most benefit to the public.

A further provision of Dr. Eitel's gift is praiseworthy; and that is the provision that Mrs. Eitel, if she survives her husband, shall have the income from the fund during her life.

The medical profession, we are sure, will rejoice that such a gift comes from one of its members and his wife.

ARE YOU GOING TO DALLAS?

The time is drawing near, in fact the time is at hand, to decide whether you are going to Dallas or not for the American Medical Association meeting. You will remember that it meets on Monday, April 19. The preliminary meetings occur on Monday, while the real meetings begin on Tuesday evening.

You may leave Minneapolis or St. Paul on a late afternoon or evening train and arrive in Kansas City between 1 and 2 P. M. on the following day. You have about three hours there before leaving at 4:30 P. M. or some other convenient time, and arrive in Dallas on the morning of the 19th. Reservations should be made early over whatever road you may go. Undoubtedly, special sleepers will be picked up along the way, so that you will meet many of your friends on Sunday. This arrangement may interfere with your going

to church, but you will find communion among the medical men inspiring, if not entertaining.

If you make the trip alone the cost of railroad fare will be approximately \$53.22 for the round trip. If you take a lower berth all the way to Dallas it will cost you \$24.00 for the round trip. If you have an upper berth the round trip is \$18.00. You will remember, too, to get your certificate at the time you are buying your ticket, and this entitles you to half fare. If you are taking your wife she is entitled to a certificate also, and the reduction in the rate. Both certificates will be validated at Dallas if two hundred fifty certificates are presented. Of course, at a meeting of this kind there will be several times two hundred fifty in attendance.

The program is a very interesting one, as you will know, if you have looked it over in the *Journal of the A. M. A.* for March 13. Dallas is said to be a very beautiful city, and there are also many places available from Dallas that you are urged to visit. Dallas is called the travel center for the southwest. You can go to San Antonio in a day. You can also go to Mexico, if your tastes run in that direction. Those who have been to Mexico say that it is the peak of picturesqueness and of historical interest. It is a felicitous blend of the cold'north and the lower tropics of Persia, India, Arabia, Spain, and the Holy Land. If you can imagine this, you will certainly take the trip to Mexico.

The bureau of registration will be located in the Automobile-Manufacturers' Building, at Fair Park. There one may learn where the various meeting places are to be found. There is a very large building in Dallas called the Convention and Exhibit Hall, which is able to house thousands of men.

The probabilities are that the weather will be settled, so one may journey to Dallas without inconvenience, and one will doubtless meet there a very comfortable atmospheric reception.

CORRESPONDENCE

POSTGRADUATE WORK AT TORONTO

TO THE EDITOR:

In reply to your request, I am glad to report briefly on the work that is being carried on at the University of Toronto, where I am doing postgraduate work.

With the increasing demand for postgraduate work the various universities are increasing their facilities to cope with this need. Postgraduate

work as conducted by the University of Toronto is obtained by special arrangement with the Dean to suit the needs of the individual. In this way much time is saved the applicant, as he can get exactly what he feels he needs without taking a prolonged course which he may not want.

The Toronto General Hospital, a hospital of 700 beds, and the Hospital for Sick Children, practically adjoining and having 262 beds, together with their large Out Patient Department, furnish a great wealth of material for study. Here a man has the opportunity to see and examine many of the patients for the first time before their admission to the hospital, as well as to follow up the cases he has examined on the wards and who have since been discharged. Last year 120,581 patients passed through the Out-Patient Department of these two hospitals.

A man is given access to the wards and clinical teachings as carried on daily. On the ward he may examine any patient or study any case he chooses, and the laboratories used only by the technicians and housemen are at his disposal. In addition, special lectures can be obtained in the subjects in which he is particularly interested. In a sense, these may be called personal courses, for, although there be but one applicant, the lectures can be obtained.

I hope this letter will convey some idea of the type of work carried on here.

Yours very truly,

W. E. G. LANCASTER, M.D.

(Formerly of Abercrombie, N. D.)

Toronto, March 24, 1926

MISCELLANY

DOCTOR FRANCIS REUBEN WOODARD*

By W. A. JONES, M.D.

MINNEAPOLIS

Dr. Francis R. Woodard, seventy-seven years old, a practicing physician in Minneapolis for the past forty years, died Monday, March 29, at the Valencia Hotel, St. Augustine, Florida, where, with Mrs. Woodard, he had been spending the winter. His son, Lawrence Woodard, of Minneapolis, brought the body to Minneapolis.

Born in Madison, Ohio, July 15, 1848, he attended the public schools at Madison until he was ten years old, and in 1858 moved with his family to Rochester, Minn., where he completed his elementary training. During this period he was engaged as a pharmacist in his father's drug store.

In 1869 he entered the University of Michigan, and, in 1876, Rush Medical College, serving an in-

*Read at the Staff meeting of the New Asbury Hospital, April 7, 1926.

ternship in the Cook County Hospital. He was graduated from Rush with the class of 1879. Shortly afterwards he came to Minnesota, opening an office in Claremont, where he practiced for three years. In 1881 he came to Minneapolis and has since followed his profession in this city.

In addition to caring for a large private practice, Dr. Woodard was connected with the surgical staffs of the Asbury, the Swedish, and the General Hospital. For twelve years he was chairman of the hospital committee of the General Hospital.

He was appointed by former Mayor Winston a member of the Board of Charities and Correction, with which he was identified for fourteen years, and for six years of that period was president of the board.

His professional connections included membership in the Hennepin county and Minnesota State Medical societies, the Minnesota Academy of Medicine, and the American Medical Association. He was a member of the Lafayette Club, the Athletic Club and the old Minneapolis Commercial Club, and attended Park Avenue Congregational church. His residence is at 2104 Park Avenue. Surviving are Mrs. Woodard, two sons, Harry and Lawrence Woodard, of Minneapolis; a daughter, Mrs. Austin J. Williams, of Minneapolis; one grandchild, Mary Helen Woodard, of Minneapolis; a sister, Mrs. E. A. Smith, of Lake City; and a brother, Frederick Woodard, of Sidney, Montana.

A GENERAL PRACTITIONER

Dr. Woodard represented a type of physician that is rapidly disappearing. He was a real general practitioner. Not only was he schooled in medicine, but one year he left his medical studies and studied law and then returned to medicine and graduated as above outlined. He was the kind of man who began to know his families, not for the illnesses from which they suffered, but as groups, so that he knew and appreciated all of their affairs, was thoroughly acquainted with their worries and anxieties, and he studied carefully their mental attitude. This was a part of his self-training, although by nature he was a man who was cordial, congenial, and sympathetic. He practiced medicine, not for the money that he received from it, but from his real live interest in his patients. Consequently, he treated all classes, rich or poor, whether he gained thereby financially or not. He left a large group of patients and acquaintances who loved him as they would a man who was always interested in their welfare. He met his fellow-physicians in the same spirit, and in his consultation work he was extremely gracious and never grasping in any way, nor did he try, as many of us do, to force opinions upon his consultant; he let him have full sway, and thereby made innumerable friends among his colleagues. He was very kind, and very appreciative of the work of the younger men; he assisted them in every way possible, both by introductions and association in their practice, and wherever he thought it would be to the advantage of the younger man he would commit the case to his care and attention. He was very public spirited,—not in politics; although he occupied appointive positions he was never keenly interested in the political parties, and incidentally thereby he gained more friends than he would otherwise.

When Dr. Woodard entered the sick-room

everything took on a rosy hue because of his smiling expression, his interest, and his appearance and manner, which were thoroughly those of a man who loved his work. And here we might say, in passing, that he was a most devoted man to his family,—extremely attentive, solicitous, a fine home visitor, and he looked after their comforts all the time. His wife, who survives him, said he never neglected in any way to inquire about her condition and never neglected to feel of her pulse before retiring. As there were some needs for attention, he remembered that always—so much so that although he was sick but thirty hours before his death, during his semi-conscious state or even during his periods of seeming unconsciousness, he tried in every way to perform the duties that were habitual with him toward Mrs. Woodard. His death was rather sudden except for the few hours of unconsciousness. It might not be amiss to state that in April, 1925, he had an attack in which he was perfectly conscious, but in attempting to walk or to use his left arm, he swayed and moved to the left, as a man might who had had a lesion of one of the branches of his basilar artery. From this he made a practical recovery so that he was able to attend to his work and was not incapacitated except for a very brief time, a few weeks, and then only because his associates insisted that he take it easier and rest more. So it was in Florida. He and his wife were just making their plans to return to Minneapolis when it was necessary for him to assist in some way with a trunk that was being packed. Mrs. Woodard turned, and when she looked around again he was crumpled up on the side of the bed. A little later he became practically aphasic and more or less helpless. Fortunately for him he lived only thirty hours after the last onset.

HIS HUMOR

There was another side to Dr. Woodard's life which we might reverently comment on because of his happy way of saying things, his happy way of adjusting himself to conditions, and his humorous side. He saw much in life that was very amusing and incidentally he was an amusing character himself. He knew how to tell a good story, and he knew how to cheer up his patients because he appealed to them in a way that no one could resist. They forgave him all of his alleged shortcomings. As an instance it may be recalled that sometimes a patient would call, saying he was very sick, and would the Doctor come right over, and he would say that he would come at once; as a matter of frequent illustration, he arrived two or three days late, but he was received just as cordially and cheerfully as if he had responded immediately to the telephone call. Occasionally, when he was going out of town for two or three days rest someone would call him up and he would say "I am very sorry, but I have to meet a train in half an hour," leaving the patient with the impression that he would be right back, but he would board the train and get his much-needed rest. He was much besieged by patients and telephone calls because they had such confidence in his judgment and reliability, which not infrequently got him into more or less humorous situations. One of his favorite stories was that a man appeared at his house one evening and asked him to make a call on his mother. Mrs. Woodard,

who guarded the Doctor carefully about these things, told the man that Dr. Woodard was not well enough to go out and that they would have to excuse him. Within a half hour a second man came and tried to persuade the Doctor to go down to see the old lady; later a third member of the patient's family came, and finally the husband came and very actively insisted that Dr. Woodard had no right to let his poor wife die in her bed without coming to see her. That was an appeal he could not resist, and the man was told the Doctor would be down as soon as he could. When he arrived at the house after midnight, the husband was in bed, snoring, and when he passed into the wife's room he said: "What is the trouble here?" and she replied, "Oh, Doctor, I am so constipated!" That was her whole trouble, and yet he was so good-natured and so willing to respond to the sick and distressed that he saw the funny side of it.

Doubtless many such instances might be recorded in which he responded to calls when he should have taken care of himself. He told of going, one time, to visit an Irishman and his wife, both of whom were more or less ill, but not very ill, judging from the circumstances. The man claimed he was suffering from a digestive disturbance, for which the Doctor prescribed some remedy that would clear him up—a bottle of black medicine. The woman was suffering from sleeplessness, and he gave her a bottle of pink medicine, presumably some bromides or some simple thing. At all events, when he went there the following day to inquire after them, the man told him he had taken a dose of the pink medicine (intended for the wife) and that his digestive condition was very much better and that he had had a very comfortable night. The wife had taken the dark medicine, and she said that she had slept beautifully all night long! They both followed the law of suggestion, of implicit faith in the doctor and his remedies. Such an instance ought to wake us up to the fact that sometimes our medicines are more or less superfluous if we could only put over our idea to our patients, as he did, that we were giving them something to cure them. The suggestion was much more valuable than the remedy.

Dr. Woodard took a very important and active interest in medical societies and he belonged to all of the societies; as mentioned heretofore, he was a frequent attendant, interested as he could be, ready and willing to discuss any situation with which he was familiar, and from his long experience in the treatment of disease he knew many things. From knowledge and experience he had gained wisdom, and his advice was good, as his reputation showed.

We need more men of Dr. Woodard's type, and the younger men will do well to study his methods, his getting at the root of conditions not only of disease but of environment and the mental status of the individual and the relationship to the family. They will be better able, then, to offer a pill or a bottle of medicine and will doubtless cure or relieve more of the functional illness that is commonly known to-day. Perhaps Dr. Woodard illustrated, sometimes, the fact that there was too much scientific investigation lost in the maze of effort and endeavor to get at the matter, while the personality of his patient left him hopelessly unable to prescribe.

A WEEK'S CAMPAIGN IN MINNEAPOLIS AGAINST SPITTING IN PUBLIC PLACES

A campaign against spitting upon sidewalks and in other public places is announced by the Hennepin County Tuberculosis Association for the week of April 24 to May 1 inclusive.

The organization has appointed a special committee to bring all phases of the campaign prominently before the public and to insure co-operation of influential groups. As announced by Miss Kathryn Radebaugh, executive secretary of the Tuberculosis Association, the committee includes Dr. Walter J. Marcle, president of the Association; Dean Lyon of the University Medical School; Dr. F. E. Harrington, Minneapolis Health Commissioner; W. F. Webster, Superintendent of Schools, Minneapolis; William A. O'Brien of the Department of Pathology of the University; Mrs. W. F. Rhinow, president, and Miss Mary Margaret Muckley, secretary, of the Third District Nurses' Association; Mrs. A. T. Fernald, of the Woman's Club; Mrs. C. G. Bates, of the Woman's Welfare League; Clyde B. Helm, of the Boy Scouts; Miss Ruth A. Sampson, of the Girl Scouts; and C. F. Roosen.

With the co-operation of Mayor George E. Leach, Health Commissioner Harrington, the University of Minnesota, and the Superintendent of Schools, the campaign has been well planned to help make spitting in public places unpopular, and to attract attention through unusual educational features.

The danger to children will be especially stressed, and the campaign as planned has its final day on May first, which has been nominated Child Health Day this year by the Minnesota federated clubwomen.

Advance information on the campaign states that while it is true that sputum on the sidewalk dries quickly and that sunshine soon kills the germ of tuberculosis, it is also true that this killing process does not take place so quickly in alleys or indoors, and that people traveling the streets can easily carry sputum on their shoes into their own homes to infect children playing on the floor. This helps to account, it is stated, for the fact that two-thirds of all children who are infected with tuberculosis during the first fifteen years of their lives, get it between the ages of three and seven. "These four years supply two-thirds of the initial infections," and Dr. Allen K. Krause, of Johns Hopkins Hospital, internationally known authority on tuberculosis, states that in no other way can the above facts be accounted for except that spitting in public spreads disease.

A speakers' bureau has been organized by the Hennepin County Tuberculosis Association to give facts on the relation of careless spitting in public places to the spread of diseases of the respiratory organs.

Both Boy and Girl Scouts have been enlisted to assist actively in the campaign against spitting.

F. E. CLOUGH, M.D.—A MEMBER OF THE SOUTH DAKOTA STATE BOARD OF HEALTH

Governor Carl Gunderson has announced the appointment of Doctor F. E. Clough, of Lead, a member of the South Dakota State Board of Health and

Medical Examiners to fill the unexpired vacancy created by the death of Doctor J. W. Freeman, also of Lead.

Doctor Clough was born in La Crosse, Wisconsin, in 1878. He was graduated from the Deadwood, South Dakota, High School, attended the College of Liberal Arts of Boston University, and was graduated from Rush Medical College of Chicago in 1902.

Upon graduation Doctor Clough immediately returned to South Dakota and became associated with Doctors Dickinson and Freeman who were doing medical work for the Homestake Mining Company, of Lead, South Dakota. With the exception of a year and a half in Alliance, Nebraska, he has been associated with the Homestake Mining Company ever since his graduation from medical college. In 1918 he was promoted to the position of chief surgeon for the Homestake Company.

During the war Doctor Clough served in the Medical Corps of the United States Army at Camp Grant, Illinois, with the rank of major.

Doctor Clough is a member of the American Medical Association, the South Dakota State Medical Association, the Association of Industrial Surgeons, the Western Surgical Association and the Association of Surgeons of the Northwestern and Burlington systems. He is Past-President of the South Dakota State Medical Association, and also the local District Medical Society.

He is married and has one son and is widely known in the State and in the Northwest and stands among the leaders in his profession.

—J. F. D. C.

NEWS ITEMS

Dr. A. B. Hawes has moved from Bridgewater, S. D., to Butler, S. D.

Dr. H. H. Sherwood has moved from Humboldt, S. D., to Kirkland, Wash.

Dr. Cyril G. Glaspel, of Grafton, N. D., is doing postgraduate work in Chicago.

Dr. C. V. Templeton has moved from Woonsocket, S. D., to Great Falls, Mont.

Dr. N. H. Scheldrup and family, of Minneapolis, have returned from California.

Dr. A. A. Law and family, of Minneapolis, have returned from a trip to Bermuda.

Dr. E. T. Boquist, of Minneapolis, has filed as candidate for coroner of Hennepin County.

Dr. Arthur C. Strachauer and wife, of Minneapolis, have returned from a month's rest in Florida.

Dr. G. L. Jacquot, of Tyler, has returned from Europe, where he has been doing postgraduate work.

Construction work on the Veterans' Hospital building to be erected at Fort Snelling has been begun.

Dr. John T. Rogers, of St. Paul, with his wife and daughter, returned from Honolulu last month.

"May Day," or Child Health Day, will be more generally observed this year than any year heretofore.

Dr. George Douglas Head and wife, of Minneapolis, have returned from a trip to the West Indies.

Dr. R. R. Heim, of Minneapolis, is now in Vienna doing postgraduate work, and will not return until late in June.

Dr. W. K. Foley, of the Veterans' Bureau, located in Minneapolis, has resigned and will return to private practice.

The clinic composed of Drs. F. H. Dubbe and O. C. Strickler and Dr. W. J. Von Bank (dentist), of New Ulm, has been dissolved.

Dr. W. W. Moir, of Minneapolis, accompanied by his wife, will leave for Europe the last of the month on the Inter-State Clinic Assembly tour.

Dr. John H. Rishmiller, of Minneapolis, Chief Surgeon of the "Soo Line," has returned from Palm Beach, where he went a month ago for a rest.

Further notice of the handsome gift made by Dr. Geo. G. Eitel to the Medical School of the University of Minnesota, appears in our editorial columns.

The school of District No. 76, a rural district of Olmsted County (Minn.), with an enrollment of 60 pupils, has 21 pupils with a 100-per-cent health score.

Dr. A. C. Dean has taken over the practice of Dr. F. M. Dryden in the Crookston Clinic and will confine his practice to diseases of the eye, ear, nose, and throat.

The Woman's Auxiliary of the Hennepin County Medical Society are actively engaged in schemes, social and otherwise, to raise money for their charitable work.

Dr. A. J. McCannel, Secretary of the North Dakota State Medical Association, will resume practice next week at Minot, N. D., after spending some months on the Pacific Coast.

Dr. L. H. Fligman, of Helena, Mont., was elected president of the Montana State Board of

Health last month; and Dr. W. F. Cogswell was re-elected executive secretary.

The Black Hills District Medical Society of South Dakota held its March meeting on March 31 at the Homestake Hospital at Lead, S. D. The Hospital staff made up the program with clinics.

H. R. Crohurst, sanitary engineer of the U. S. Department of Public Health, will direct a survey of the extent the water of the Mississippi River from LaCrosse, Wis., to its source is polluted.

At the annual meeting of The Clinical Club of Minneapolis officers were elected as follows: President, Dr. Roscoe C. Webb; vice-president, Dr. Kenneth A. Phelps; secretary, Dr. Donald McCarthy.

Dr. W. F. Keller, who has had charge of the city health work of Sioux Falls, S. D., for nineteen years, has resigned. Dr. Keller has given the department a high reputation for efficiency, and now retires with the consciousness of having done a good work for the people of his city.

Dr. Gilbert T. Haugen, of Fergus Falls, died last month at the age of 47. Dr. Haugen was a graduate of the Medical School of the University of Minnesota, class of '05. He was a member of the Board of Education of Fergus Falls. He specialized in eye, ear, nose, and throat work.

Two short courses of postgraduate work were started last week by the Medical School of the University of Minnesota. Dr. A. T. Rasmussen of the faculty will give lectures on neurology, and Dr. W. A. O'Brien, also of the faculty, will give lectures and demonstrations on pathology. The work will continue until June.

Dr. Hilding Berglund, who recently came to the University of Minnesota, to become Chief of the Department of Medicine, has accepted a large number of invitations to speak at medical society meetings in the Northwest and on various subjects. On March 31 he was the guest of honor at the monthly meeting of the Yankton (S. D.) District Medical Society. His subject was "Constipation."

Dr. Francis R. Woodard, of Minneapolis, died in Florida last month, at the age of 78. He graduated from Rush in the class of '79, and after an internship in the Cook County Hospital, he came to Minneapolis, where he practiced for forty-four years until the time of his death. He had served on the surgical staffs of the Asbury,

Swedish, and General Hospitals, and was a member of the Minnesota Academy of Medicine and other medical societies. An extended notice of Dr. Woodard appears in another column.

The recent work done in the Bacteriological Department of the University of Minnesota with detoxified toxins in the immunization against scarlet fever and diphtheria, is treated in two papers in the *Journal of the American Medical Association* for April 3 by Dr. W. P. Larson, head of the Department, and Dr. Howard Eder, of Minneapolis, in one paper; and by Dr. Larson and Dr. E. J. Huenekens (Minneapolis) and Dr. Woodard Colby (St. Paul) in the other paper.

At the monthly meeting of the Huron (S. D.) District Medical Society, held at Huron on April 1, papers were presented by Dr. J. C. Shirley, of Huron, on "Hematuria," and by Dr. J. M. Malloy, of Mitchell, on "Goiter." Dr. Malloy, who recently joined Drs. Delaney and Tobin, at Mitchell, the group name now being Drs. Delaney, Tobin and Malloy, recently completed fellowship work of three years at the Mayo Clinic on the medical service of Drs. Plummer, Pemberton, Lemon, Eusterman, and others.

The Stutsman County (N. D.) Medical Society

On March 29, the Stutsman County (N. D.) Medical Society held their regular meeting at Jamestown.

Dr. Hans Hough, of Moorhead, Minn., read an excellent paper on "Diseases of the Thyroid." His talk was accompanied with lantern slides and was much appreciated.

The balance of the program consisted of the presentation and discussion of clinical cases; the cases reported were the following: "Hemorrhoidectomy under Caudal Anesthesia." "Report of Two Cases of Eclampsia with Treatment;" one case of post partum hemorrhage, and one case of hyperemesis gravidarum.

Dr. Berg, of Jamestown, was admitted to membership in the Society.

EDWARD J. HOLTZ, M.D.
Secretary.

Cass County, N. D. Medical Society—"A Neat Bulletin"

Dr. McCannel, Secretary of the North Dakota State Medical Association, sent THE JOURNAL-LANCET the following notice, which he calls "a neat bulletin," and we agree with him, and we publish it for the information it carries and as a suggestion to other societies.

Dear Doctor:

Next Cass County Medical Society meeting will be held at the Commercial Club, with dinner at 6:30, Thursday evening, March 25. Three of our members will present 15-minute papers:

Dr. T. H. Lewis: "Some Practical Surgical Suggestions."

Dr. H. B. Huntley: "Influenza in General Practice."

Dr. W. H. Lang: "Amebiasis."

General discussion will follow these papers.

Will every member please reserve the evening of April 29 for the next meeting. Something special! Watch for further announcement.

We now have 60 active paid-up members, with three yet to be heard from, making a total of 63. If we reach this number, we can send a third delegate to the State Association meeting in May.

Dr. John H. Rindlaub, President of the State Association, has an important matter to bring before the Society at our next meeting.

You may be interested to know the ten principal causes of death in Fargo last year.

Cancer	36
Diseases of the heart and circulatory system.....	35
Cerebral hemorrhage and apoplexy.....	20
Appendicitis	20
Diseases of early infancy	19
Pneumonia and pleurisy.....	17
Tuberculosis	16
Diseases of the kidney	11
Death by accident	10
Diabetes	9

We would appreciate your suggestions for making this a real news letter rather than a mere announcement of meetings.

Sincerely yours,

L. J. EVANS, M.D.
Secretary.

PROGRAM OF THE ANNUAL MEETING OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION

Annual meeting of North Dakota State Medical Association will be held in Minot, May 25 and 26, 1926.

The local committee in charge of program have made preparation for the entertainment and scientific program. This year the meeting will consist of dry clinics and demonstrations by men outstanding in their different specialties. The following is the tentative program.

Tuesday Morning, May 25, 1926 Masonic Temple

1. Registration—8:00 A. M.
2. President's Address—8:30 A. M. Dr. John Rindlaub.
3. Injury of Wrist Joint (Lantern Slides). Dr. Emil S. Geist, Minneapolis.
4. Inflammatory Affections of Middle Ear—The Responsibility of General Practitioners. Dr. Wm. W. Lewis, St. Paul.
5. Pediatrics—Clinic. Dr. O. W. Rowe, Duluth.

The House of Delegates will meet in small dining-room of the Leland Hotel at 12 o'clock.

Tuesday Afternoon, 1:15 P. M., May 25, 1926 Masonic Temple

1. Genito-urinary Clinic. (Lantern Slides). Dr. Herman Kretschmer, Chicago, Ill.
2. The Doctor and the Personal Injury Claimant. Dr. Arthur Sweeney, St. Paul.
3. Chest Conditions.
 - (a) Some Points in Early Diagnosis of Lower Respiratory Affections. (Lantern Slides). Dr. J. S. Pritchard, Battle Creek, Mich.
 - (b) Septic Infections (Roentgen Plates). Dr. David A. Stewart, Ninette, Manitoba.

Wednesday Afternoon, 1:30 P. M., May 26, 1926 Masonic Temple

1. Encephalitis Lethargica. Dr. W. D. Sheldon, Rochester.
2. Surgical Clinic and Demonstration. Dr. Arnold Schwyzer, St. Paul.
3. Dr. Olin West. Secretary, American Medical Association.

Wednesday Morning, 8:30 A. M., May 26, 1926 Masonic Temple

1. Hypertension. Dr. Bell, Department of Pathology, University of Minnesota; Dr. S. Marx White, Minneapolis.
2. Mental Disease (Early Diagnosis). Dr. R. M. Mitchell, Weyburn, Sask.

COMMITTEES

Scientific Program

Dr. A. D. McCannel, Chairman
Dr. Nestos
Dr. Fardy
Dr. R. W. Pence
Dr. Cameron

Arrangements and Place of Meetings

Dr. E. M. Ransom, Chairman
Dr. Peterson
Dr. Wheelon
Dr. Andy Carr
Dr. H. M. Erenfeld

Registration and Badges

Dr. Knapp, Chairman
Dr. Haraldson
Dr. A. Carr, Sr.
Dr. Hanson

Banquet

Dr. J. R. Pence, Chairman
Dr. Devine
Dr. A. J. McCannel

Hotel Reservations

Dr. Wheelon, Chairman
Dr. Newlove
Dr. Stone

Reception

Dr. Kermott, Chairman
Dr. Yeomans
Dr. Newlove
Dr. A. Carr, Sr.
Dr. Peterson
Dr. Sinamark

Ladies Entertainment

Mrs. R. W. Pence, Chairman
ARCHIE D. MCCANNEL, General Chairman

NORTH DAKOTA ACADEMY OPHTHALMOLOGY AND OTOLARYNGOLOGY

Banquet and annual meeting will be held at 7:00 o'clock Monday evening, May 24, at Leland Hotel.

Program

President's Address. Dr. Ruud, Grand Forks, N. D.
Incipient Glaucoma. Dr. Wm. W. Lewis St. Paul.

Special Notice

The committee that has in charge the publication and sale of Dr. Grassick's book (North Dakota Medicine) earnestly request that all who want a copy send their order at once, and that all who have purchased copies and not paid for them remit at once the price of the book, \$3.50.

Remittances should be made to Dr. G. W. Williamson, Grand Forks. It is urgent that this be done before the next annual meeting of the Association.

Good Country Practice Wanted

In a prosperous community with plenty of work. Address 134, care of this office.

Position as Anesthetist Wanted

By a graduate nurse in hospital or dental clinic. Prefer Twin Cities. Address 136, care of this office.

A McCasky System for Sale

With a full list of supplies. Will sell at once for half the original cost. Address 132, care of this office.

Bucky Diaphragm for Sale

Will sell an Engeln Bucky Diaphragm in first-class condition for \$500. Address 145, care of this office.

Minneapolis Office for Rent

On the best business corner on the East Side. Inquire of the East Side Pharmacy, 400 East Hennepin Ave.

Locum Tenens Work Wanted

An experienced physician who is at leisure can be of service to anyone wanting assistance. Address 133, care of this office.

Physicians Wanted in a Group

An eye, ear, nose, and throat specialist and an internist can find fine offices at reasonable rent with a group in Fargo, N. D. Address 141, care of this office.

Position Wanted

As an office nurse and assistant for a busy general practitioner or obstetrician. Can administer anesthetics. Minneapolis preferred, but will consider outside offers. Address 143, care of this office.

Hospital and Practice in Minnesota for Sale

Terms to right man. New building, offices, operating room, and five beds downstairs; upstairs, living quarters, six rooms, bungalow plan. Cash business \$10,000 to \$12,000 per year. Business runs \$16,000 total. General and surgical practice. This is close to Twin Cities. Equipment optional. Will also rent to first-class man. Am going to specialize and mean business to right man. Address 139, care of this office.

Matron and Head Nurse Wanted

By the Mudcura Sanitarium, Shakopee, Minn. (20 miles from the Twin Cities). Good hours and good wages to the right person. Address 148, care of this office.

Locum Tenens Wanted

A substitute for nine months is wanted in a firm of two physicians the younger of whom is to do post-graduate work. In a Minnesota town of 1,000. Salary will be paid. Address 131, care of this office.

High-Grade X-Ray Technician Wants Position

Has had five years' experience in large clinics and in a large Twin City Hospital. Can give reference from all for whom she has worked. Available at once. Will go to the country. Address 140, care of this office.

X-Ray and Laboratory Position Wanted

By a woman who has also had two years training as a nurse and considerable experience as a nurse and in laboratory and x-ray work. Desires a position in a small hospital. Will give faithful service. Best of reference. Address 137, care of this office.

Work Wanted

By a German-speaking physician of excellent training and large experience. Position wanted as assistant, partnership, or locum tenens. Spent eight years in postgraduate hospital training, chiefly surgical and gynecological. Best of references. Address 138, care of this office.

X-Ray Hospital Equipment for Sale Cheap

A \$6,000 Victor X-Ray hospital equipment including combination table, stereoscope, timer, two Coolidge tubes, tank, screens, etc. A complete equipment. Used only a short time in a hospital now closed. Will sell for practically half cost. Address 135, care of this office.

Practice for Sale

Large general practice in Eastern South Dakota to purchaser of office equipment and residence. Modern town of 700; fine territory; nearest competition 24 miles. Price less than invoice; cash or terms. A real location for a first-class man with a little capital and ability to work. Address 146, care of this office.

Fine Location and Fine Office in Minneapolis

There is a splendid location in a fast-growing section with no competition at 2300 West 50th St. Steam-heated modern offices at reasonable rent. End of the Oak and Harriet carline in fine new section of city. Inquire at above location or telephone Walnut 2413 (Christianson Drug Co.) or Hyland 3129 (owner of property.)

Practice for Sale

Will turn over good country practice and office equipment to purchaser of my modern 11-room house. Collections good, banked over \$6,500 last year. Town of 1,000; mixed farming and dairying community; 60 miles from Twin Cities; good roads, churches and school; competition light. Just the place for a German. Will arrange terms to right party. Address 147, care of this office.

PHYSICIANS LICENSED AT THE JANUARY (1926) EXAMINATION TO PRACTICE IN

MINNESOTA

BY EXAMINATION

Name	School and Date of Graduation	Address
Anderson, Gilbert Christian	Columbia, M.D., 1917	Rochester, Minn.
Anderson, Harold Theodore	U. of Minn., M.B., 1925	329 Union St., Minneapolis
Bayley, Emery Covell	U. of Minn., M.B., 1925	Lake City, Minn.
Berge, David Oscar	N. W., 4 yr. Cert. Med., 1925	Ancker, Hospital, St. Paul, Minn.
Beyer, Wm. S.	U. of Minn., M.B., 1925	1082 17th Ave. S. E., Minneapolis
Brockbank, Thos. Wm.	Georgetown, M.D., 1924	Rochester, Minn.
Burton, Carl Gustav	U. of Minn., M.B., 1925	Bethesda Hospital, St. Paul, Minn.
Dassett, Jos. Wm.	U. of Minn., M.B., 1925	3128 Hennepin Ave., Minneapolis
Dodge, Warren Maynard, Jr.	U. of Minn., M.B., 1925	Farmington, Minn.
Eich, Matthew	U. of Minn., M.B., 1925	Minneapolis General Hospital
Etheredge, Shuler Hardin	Med. Coll. of So. Car., MD., 1924	Rochester, Minn.
Farabaugh, Charles L.	U. of Minn., M.B., 1925	Ancker, Hospital, St. Paul, Minn.
Forster, Walter Livingstone	Rush, Cert. Med., 1925	Ancker, Hospital, St. Paul, Minn.
Freedman, Newman Barnett	McGill, M.D., 1923	Rochester, Minn.
Freise, Paul W.	N. W. Cert. Med., 1925	St. Mary's Hospital, Minneapolis
Gillespie, James Ogilvie	U. of Minn., M.B., 1925	Forest River, N. D.
Hart, Wm. Eustis	Wash. U., Mo., M.D., 1925	St. Mary's Hospital, Minneapolis
Hunter, Elmer Noble	U. of Minn., M.B., 1925	Detroit, Mich., c/o Receiving Hospital
Huseby, H. Walter	U. of Minn., M.B., 1925	Minneapolis General Hospital
Jacobson, Clarence	U. of Minn., M.B., 1925	400 N. 58th Ave., Duluth
Jensen, Herman H.	U. of Minn., M.D., 1925	University of Minnesota
Johnson, Olga Holie	U. of Minn., M.B., 1925	512 Delaware, Minneapolis
Kepler, Edwin John	U. of Minn., M.D., 1924	Rochester, Minn.
Lufkin, Nathaniel Hall	U. of Minn., M.B., 1925	617 Goodrich, St. Paul
Macfarlane, Peter Harvie	U. of Minn., M.B., 1925	515 Ontario, Minneapolis
McDonald, Robert Edmund	U. of Minn., M.B., 1925	3952 Aldrich, Minneapolis
McMahon, Leo Hartney	St. Louis U., M.D., 1925	Breckenridge, Minn.
Maxwell, Harvey Cecil	U. of Minn., M.B., 1925	3303 2nd Ave. So., Minneapolis
Meland, Ernest Lawrence	U. of Minn., M.B., 1925	Pelican Rapids, Minn.
Muir, Edwin Clay	U. of Minn., M.B., 1925	Winona, Minn.
Parsons, Eloise	Rush, M.D., 1925	Rochester, Minn.
Rens, John Louis	U. of Minn., M.B., 1925	2927 46th Ave. So., Minneapolis
Schroeder, Wm. Frederick	U. of Minn., M.B., 1925	1063 13th Ave. S. E., Minneapolis
Sitar, Richard Frank	N. W. Cert. Med., 1925	Ancker, Hospital, St. Paul, Minn.
Somerfield, Harry Alexander	Stanford U., M.D., 1925	University of Minnesota
Sontag, Lester Warren	U. of Minn., M.B., 1925	Heron Lake, Minn.
Stephenson, Robert Abram	Columbia, M.D., 1918	St. Luke's Hospital, St. Paul, Minn.
Swenson, Orvie John	U. of Minn., M.B., 1925	815 8th Ave. So., Minneapolis
Tuttle, Glen Willis	U. of Minn., M.B., 1925	Minneapolis University Hospital
Warner, Harry Reuben	U. of Minn., M.B., 1925	2232 Langford, St. Paul, Minn.
Wenaas, Elmer Justin	Geo. Wash. U., M.D. 1924	Mt. Iron, Minn.
Wilhelmj, Chas. Martell	St. Louis U., M.D., 1922	Rochester, Minn.
Winer, Louie Harry	U. of Minn., M.B., 1925	Eveleth, Minn.

BY RECIPROCITY

Allen, Edgar Vannice	U. of Neb., M.D., 1925	Rochester, Minn.
Bailey, Wm. T.	Tufts, M.D., 1909	Nopeming, Minn.
Fortin, Harry John	, M.D., 1916	Rochester, Minn.
Jones, Robert Duval, Jr.	U. of Penn., M.D., 1924	Rochester, Minn.
Kleinheksel, John Lewis	U. of Mich., M.D., 1924	Rochester, Minn.
Shumate, John Kenly	Med. Coll. Va., M.D., 1921	Nopeming, Minn.

LICENSED ON NATIONAL BOARD CERTIFICATE

Johnson, Norman Percy	Harvard, M.D., 1923	1701 Irving Ave. So., Minneapolis
Smith, Harry LeRoy	U. of Iowa, M.D., 1916	Rochester, Minn.

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THE PHYSIOLOGY AND PATHOLOGY OF THE BLOOD IN RELATION TO SURGERY*

BY WILLIAM J. MAYO, M.D.

ROCHESTER, MINNESOTA

The seventeenth century, through the achievements of William Shakespeare in the world of letters, and of William Harvey in the world of medicine, was one of the great periods in history.

In the world of medicine the discovery of the circulation of the blood was only one of the epochal contributions made by Harvey. He was the first to apply methods of research to physiology. He introduced experimentation under controlled conditions, which made the results applicable to disease conditions in man. It is surprising, when one examines his work after nearly three centuries, to find that his methods of experimentation were accurate and commendable. When we consider that Harvey stood alone among his contemporaries, that from his own mind came all that he accomplished, we can better appreciate his vision and courage.

Harvey not only established methods of physiologic research, but he also introduced the idea that form followed function, in contradistinction to the view generally held at that time, that form controlled function. In his study of the heart, for example, he pointed out that the pericardium is not merely a sac which enables the heart to act smoothly, but a protecting agent. He showed that, in times of great stress, when the musculature of the heart is stretched to the point of its physiologic endurance, the pericardium restrains

its further dilatation and prevents serious injury to the musculature, a point of view which has only recently been accepted.

For two centuries comparatively little was added to Harvey's conception of the blood stream, but in the middle of the nineteenth century sound contributions were made to a knowledge of the blood in its relation to disease. Addison, in 1849, described a disease of the suprarenals which has been given his name, and ascribed the circulatory asthenia to failure of the suprarenals to function. In a few short pages, he gave a lucid description of pernicious anemia which has never been excelled.

One might pause here to pay homage to Guy's Hospital, in England, which was the laboratory responsible for so many revolutionary discoveries in medicine. Addison worked here, and Bright, in 1827 and in 1839, illuminated the various forms of nephritis here; the full significance of Bright's work has but lately been appreciated. Hodgkin, whose name is an eponym of the lymphatic and splenic dyscrasia, of which we know so little, made observations in the wards of Guy's Hospital, which resulted in his description of this syndrome. Wilks, who represented the beginning of a sound clinical understanding of diseases of the central nervous system; Hilton, whose monograph on rest and pain my father considered one of the greatest contributions of his generation; and Fagg, whose work on med-

*Presented before the Hennepin County Medical Society, March 1, 1926.

icine correlated so wisely clinical and pathologic data, were but a few of the eminent workers of bygone days in Guy's.

We have thought of the blood as an organ which contains cellular elements circulating in a liquid medium, called the blood plasma, but only recently have we begun to understand what a complex fluid this is. Through physical investigations with the microscope, the formed elements in the blood have been oriented and their relation to certain pathologic conditions established. These formed elements are the white cells, the red cells, the blood platelets, and various morphologic modifications of these elements. The accepted ratio of 5,000 white cells to 5,000,000 red cells, and from 225,000 to 400,000 blood platelets to 1 c. mm. of blood, is merely a statement of averages which at the present time we call normal. With the high-powered microscopes of to-day it is possible to see particles as minute as $1/10$ micron, or $1/250,000$ inch in diameter. Perhaps our minds have been diverted from the main consideration by the multiplicity of variations in cells which have been described by many investigators using the microscope.

In the embryo the reticulo-endothelial and lymphoid organs take part in the formation of the blood; the liver and spleen until the fifth month are sources of the cellular elements of the blood. There are many reasons for the belief that the white cell is the primitive blood cell. The blood of invertebrates contains no hemoglobin and is therefore transparent, and yellowish or white. The amphioxus, a cordate which has been suggested to be the connecting link between the invertebrates and the vertebrates, is commonly said to be the only vertebrate with white blood. The primitive white blood cell is found in the fetus, and in all the lower orders of life that have a circulating medium. Carrell, in discussing the potential immortality of living tissue which is provided with nutrition and whose waste products are removed, calls attention to the lymphocyte as a tiny, free-moving white cell which carries to fixed cells the essentials of growth, a function which is evidenced by the action of the lymphocyte in the healing of wounds. The lymphocyte not only is concerned with the healing of wounds, but is one of the chief defensive agents in infectious processes, second only in the superior phagocytic power to the large mononuclear white cell. The differential diagnosis of diseases which involve the white cell depends to a great extent on changes in the numerical relation, form, shape, and general characteristics of the white cell. Especially must the importance of the abnormal

type of white cell, such as the myelocyte, be studied in the acute leukemias, and similar dyscrasias, in which the white cell count is often not so significantly increased as in the chronic leukemias. The white cell is nucleated and takes a prominent part in growth and repair.

We realize rather dimly the relation of the white blood cell to various diseases of a lymphoid character. Much of the evidence at hand is contradictory; for instance, that concerning the lymphosarcomas, and, more specifically, that concerning Hodgkins disease, in which the earlier observers found leukopenia, but modern methods have shown that the disease is more often accompanied by a moderate elevation of the leukocyte count, from 10,000 to 12,000. In the acute infections much valuable information is gained from a qualitative and quantitative study of the leukocyte.

In a general way we know that the red blood cell is a descendant of the white blood cell. The blood of the vertebrates is red because it contains hemoglobin, and the hemoglobin, to each molecule of which iron contributes one atom, is carried by the red cell. Formerly it was believed that the red cells were completely renewed every ten days, but it is now known, through the work of Ashby, of the Mayo Foundation, that the red cells may live for many weeks. The red cell conveys oxygen to the tissues, takes carbon dioxide from the tissues to the lungs for expiration, and in the lungs receives a fresh supply of oxygen.

It is surprising, considering the prime importance of oxygen, that the body does not have the capacity for storing oxygen or substances which will produce it under stress, especially as 47 per cent of the earth, the air, and the water, taken as a whole, is composed of oxygen. While the extremities of the body may be deprived of oxygen for several hours, with recovery, if the central nervous system, especially the medulla, is deprived of oxygen for from seven to ten minutes, death results. The processes of life are dependent on oxidation. From oxidation are derived heat, energy, and the power of growth. The red cells function, but have no nucleus and, therefore, no power of reproduction. There are certain evidences from analysis of the function of cells that the nucleus is largely devoted to growth and the cytoplasm to function. In the cancer cell the nuclear elements are extraordinarily active and large in proportion to the cytoplasm. The more predominant the nuclear elements of the cancer cell are over the cytoplasm, the more malignant the neoplasm, and when the cytoplasm does not differentiate and afford evi-

dence of physiologic activity, the cell is highly malignant, because all of its oxidizing power is converted into growth without function, at the expense of the controlled oxidation of the normal cell. This question of oxidation in relation to diseases of the blood must receive intensive investigation. In the anemias blood transfusion clearly demonstrates the value of the carriers as a temporary aid to rehabilitation.

In the future a most fruitful field for study should be the varied conditions which lead to the development of the anemias. At present we recognize pernicious anemia with certainty only when it approaches a terminal stage. Is it merely the end-result of a number of processes which interfere with the normal formation of red cells?

Investigations with the ultramicroscope of the minute constituents of the blood cells are leading to new views concerning the pathology of the blood, and will eventually assist in a better correlation of conditions of the blood plasma and of the stability and function of the cellular elements of the blood.

Rockwood of the Mayo Foundation has had interesting results in his research on hemolysis. Under the ultramicroscope the normal red corpuscle appears as a very bright ring of light around a dark center. As the cell hemolyzes, the bright ring fades to a dull gray rim surrounding the stroma or "ghost," but under proper conditions the reverse phenomenon of Brinkman can be produced; that is, hemoglobin may re-enter the cell. Methods of investigation along physical lines are most important, but it is not easy for us to accept a physical explanation for the so-called vital phenomena, and it is especially difficult for morbid anatomists to throw away their conceptions based on dead cells and accept the facts which living cells reveal.

The relation of the blood platelets, which are derived from the megakaryocytes of the bone marrow, to blood clotting and the purpuras, has become evident, as well as the agency of the spleen in the destruction of blood platelets, which may cause a drop from a normal count of from 225,000 to 300,000 or more to 40,000 or less, causing chronic purpura in which splenectomy has given striking curative results.

We begin to look on the spleen in a new light. As one of the reticulo-endothelial tissues it appears to act as a coarse filter of the cellular elements of the blood which have outlived their usefulness, and is a limited source of white blood cells. The spleen is a destroyer of worn-out red blood cells, and if it is enlarged it may, by an increased destructive activity, bring about anemia.

In pernicious anemia the spleen perhaps acts normally as an executioner of red cells of reduced value which, however, are capable of maintaining life and are the best the bone marrow can produce. These facts have not been sufficiently correlated with the secondary anemias, but we are beginning to see the destructive effects of infectious and chemical toxins on the red blood cell, causing changes in its form, its hemoglobin content, and its ability to carry oxygen to the tissues.

We can look on the vascular system as channels for transporting cellular elements in a liquid medium, the blood plasma. Until recently our knowledge ended there, but to-day, through physicochemic studies, we are learning much concerning this problem. We see the blood plasma carrying nutrition to all parts of the body, effete substances, which are to be eliminated, to the emunctories and chemical substances, spoken of as internal secretion, which co-ordinate the fundamental vegetative functions and, finally, assist in returning carbon dioxid to the lungs for exhalation. Krogh has shown that the walls of the vascular capillaries contain contractile cells derived from the non-striated muscle, which are to a large extent self-controlled. Under the circulatory pressure of the systole of the heart the capillaries permit oxygen and molecular substances, such as the crystalloids and amino-acids, to pass by filtration, osmosis, diffusion, and other forces, through the stomas in the vessel wall to serve vital purposes: nutrition, heat, and energy. When certain toxic poisons, for example, histamin, paralyze the contractile cells, causing the stomas in the capillary wall to open more widely, larger bodies, such as the colloids of the blood plasma, pass from the capillaries into the tissues, resulting in the condition known as shock.

These colloid substances are too minute to be seen with a microscope; they vary from 1/10 micron or 1/250,000 inch in diameter to 1/1,000 micron, approximately 1/25,000,000 inch in diameter. Knowledge of the colloids comes through the fact that the colloid molecules are larger than a ray of light, and by that the ultramicroscope they can be seen to reflect the ray of light. Up to 1/100 micron or 1/2,500,000 inch the ultramicroscope determines the presence of the colloid bodies, but gives no idea of their size, shape, color, or other significant details. Particles less than 1/1,000 micron in diameter lie in the molecular and atomic field, in which chemical changes take place. The study of the blood could be brought only to a certain point by the use of the microscope. The development of the

ultramicroscope, which extends our methods of physical approach, has opened new and enormously fruitful fields for the investigation of colloids. Colloids concern life itself.

Sir William Bayliss has well said that the dividing line between physics and chemistry has disappeared, that only under certain physical conditions can there take place the electric exchange of electrons and protons in the atomic field.

According to Bohr, the atom is composed of a positive nucleus, or proton, surrounded by a negative electron or electrons. The simplest atom is that of hydrogen, composed of one proton and one electron, the latter being in rapid motion around the proton. Henry Moseley, a talented young Englishman who was killed in the Gallipoli campaign at the early age of twenty-eight, analyzed the atom by the refraction of the x -ray, an electromagnetic vibration only $1/100,000,000$ inch in length, smaller than the atom. He demonstrated that there are ninety-two possible elements between hydrogen, the lightest, and uranium, the heaviest, and that between each two elements in the progression in atomic weight there is approximately the weight of one atom of hydrogen; that is, an atom of oxygen has sixteen protons and sixteen electrons, an atom of gold seventy-nine of each, an atom of mercury eighty of each, an atom of radium eighty-eight protons and eighty-eight electrons, and an atom of uranium ninety-two of each. It is interesting to note that Miethe has succeeded in removing one electron from mercury, converting it into gold. As a result of Moseley's work, Rutherford, Thompson, and others have been able to fill in all but four of the elements lying between hydrogen and uranium. Many elements are not stable, or contain more than the necessary number of protons or electrons, and these superfluous, easily loosened, or free electrical units are called *ions*, and are responsible for the atomic changes which we speak of as chemistry.

It is in the atom and molecule that oxidation takes place and structure is altered. Crystalloids, of which glucose, derived from carbohydrates, is a good example, lie in the molecular field, as do the amino-acids, which are the final results of protein metabolism. We now know that these ultimate products are formed in the liver, for, as Mann has shown by animal experimentation, if the liver is removed, sugar and urea in great part disappear from the blood.

The newer methods being applied in the study of the blood are physical. The elimination of various dyes from which much valuable information has been brought out by Rowntree and others,

as Evans has shown, is largely a filtration phenomenon.

Compare the knowledge of the quantitative derangement of the function of the liver and kidney, which has come through the study of the blood, with that which was obtained from the study of the excreta. One must realize that contamination, fermentation, and bacterial action of excreted material did much to obscure the older field of study and to interfere with the proper understanding of the function of these organs. Compare the limited information concerning elimination of urea, gained from examination of the urine, with the splendid knowledge obtained by the present-day study of the blood urea. As a result of this newer knowledge, the uremic patient may be so well prepared that operation can frequently be performed safely in many types of cases which were formerly accompanied by a high mortality.

This discussion may seem ultrascientific and impractical, but, on the contrary, it is most practical. To-day precise examinations of the blood for reactions which concern the colloids and molecular and atomic substances have been raised to the dignity of sound methods of securing information concerning vital phenomena.

Let us take, as an example, examinations of the blood in relation to the kidney. The function of the kidney may be briefly defined as the filtration of non-colloid constituents of the blood plasma through the capsule, and the resorption of threshold bodies in solution through the tubule cells. The kidney is, therefore, chiefly a filter, whose function is to eliminate from the blood certain metabolites, such as urea, chlorids, and creatinin. Urea is one of the smallest of the molecules, and is not hydrated; that is, it does not change in size by absorbing water. We know that the urea molecule must be about the size of the molecule of the dye, phenolsulphonephthalein, which Rowntree has shown by intravenous injections would be eliminated from the blood through the kidneys about as urea would be eliminated. The Rowntree and Geraghty phenolsulphonephthalein test is an accurate guide to the functional capacity of the kidney to eliminate urea. Retention of chlorids in the blood, through disturbance of renal function, results in the edemas. Creatinin is another waste material excreted by the kidneys. Estimation of these substances in the blood affords the most reliable prognostic index to renal function.

Finally, the kidney eliminates excess water in order to maintain a proper physical state of fluidity, that the colloids and molecular constit-

uents of the blood plasma may be maintained in the condition necessary to permit chemical exchanges. Eighty per cent of the body is composed of water. Colloid bodies can be seen only by refraction with the ultramicroscope and are held in suspension in fluids, while molecular and atomic particles form true solutions, which, according to Arrhenius, may undergo electrolytic dissociation into positive and negative parts which constitute the ions.

Through studies of the blood has come the remarkable improvement in results from operations on patients with reduced renal function. Such improvement could not be estimated by the old method of examining the urine. When the blood urea rises above 125 an operation carries a very serious risk. The well-prepared patient may recover from operation, provided the urinary obstruction can be relieved, as in certain conditions of the prostate, even when the blood urea exceeds 300. When the blood creatinin rises above 5, a serious barrier to secretion is present, and the patient is in danger; when it rises above 10, the patient will probably die unless the barrier is removed. The percentage rise and fall of the blood chlorids must be watched with care, but are not so striking as in the case of urea. If there is grave retention of blood chlorids edema may occur. In cases of high intestinal obstruction the chlorids of the blood fall markedly. This is frequently associated with an alkalosis and its clinical manifestations.

If the renal function, in relation to elimination of urea, chlorids, and creatinin, is so reduced that the urine cannot concentrate normally, a large intake of water is necessary. That is, if the urine normally is excreted in a concentration of 1.020, and the kidneys are able to concentrate only to 1.005, the patient must take extra water to insure proper elimination through the kidneys. If the renal incompetency is in the stage of cardiac insufficiency, the patient may not bear the amount of water necessary for elimination, and a secondary edema may develop from this cause. Measures must be taken to obviate this cardiorenal complication. Under intelligent management improvement in the condition of a patient with most serious toxemia from renal insufficiency may be brought about by the use of sufficient glucose, sodium chloride solution, administered, if necessary, intravenously. The glucose maintains heat and energy in the body, and reduces the metabolites in the blood by preventing destruction of tissue. If the blood chlorids are high, water without sodium chlorid is indicated, but as a rule they are low, and large quan-

ties of hypertonic sodium chloride solution are given, if urgent, intravenously.

When acute intestinal obstruction is produced experimentally in a dog the animal usually lives not more than a few days; but, when in this condition, if he is given intravenous injections of glucose and sodium chloride solution, at intervals, he may possibly live thirty days. This experimental condition in the dog approximates high intestinal obstruction in man. In the toxemia of high intestinal obstruction acute dilatation of the stomach is a prominent feature.

Without regard to cause a definite treatment should be established to relieve the shock, dehydration, and vomiting, from which so many of these patients die. On examination of the blood it is found that the normal urea blood content of the patient has greatly increased. The plasma chlorids, which should be from 560 to 650, are greatly reduced. The plasma carbon dioxide volume per cent, normally from 56 to 65, has increased, and when above 100 tetany is likely to develop.

The indications are fulfilled by introducing, by rectum, subcutaneously, or intravenously, water, glucose, and sodium chloride. If the patient is very ill, the intravenous method is certain and speedy. A liter of water containing 1 per cent salt and 10 per cent glucose, twice or three times a day, is so effective that patients apparently moribund will often improve so greatly in a few days that an operation, if necessary, can be performed safely. The stomach must be kept empty by gastric lavage. Even in the mechanical obstructions great improvement can be brought about by these measures. In many cases a jejunostomy, as a temporary measure, may be required, in addition, to evacuate the intestinal contents accumulated owing to obstruction and for feeding the patient later. My colleagues, Balfour and McVicar, have made practical use of these measures with great success.

Examination of the blood sugar and careful preparation for operation permit the diabetic patient, as shown by Wilder, to be operated on almost as safely as the patient without diabetes. Sugar is a threshold substance, and the threshold varies greatly in height in different persons. The person with a low-sugar threshold, who takes an undue quantity of glucose or glucose-producing carbohydrates, may pass sugar in the urine. This type of glycosuria is called renal diabetes and is considered of little significance. Another person with a high-sugar threshold may have no sugar in the urine, but an increased blood-sugar content, sometimes accompanied by a carbuncle or

a succession of boils. Infection greatly decreases the sugar tolerance, and the patient with mild diabetes may be the one to develop coma following an operation. The higher fatty acids cannot be properly metabolized by the diabetic patient without carbohydrates. Such patients should have plenty of sugar, at least 100 gm. each day for several days before operation, and at least 50 gm. each day after operation, sufficient insulin being used to maintain tolerance.

We associate the formation of the white cells with the reticulo-endothelial organs, the red cells with the bone marrow, the blood platelets with the megakaryocytes; we must associate the blood plasma with the liver. Until recently we have known little about the function of the liver, but now, by means of the tetrachlorophthalein test of Rowntree and Rosenthal, and by certain other methods we are able to measure the degree of derangement of hepatic function fairly accurately. That the liver is essential to life, and that it has the greatest power of regeneration, through hyperplasia, of any organ of the body, has been proved. Mann has shown that in the dog 70 per cent of the liver can be removed with regeneration of the organ in fourteen weeks. The liver controls the final steps in the conversion of carbohydrates into the sugar necessary for the heat and energy of the body; it converts the amino-acids into substances suitable for utilization by the body, and stores fats in a form usable by the body. With regard to the formation of the bile in the liver: while Whipple and Mann, and Sheard have shown that bile pigments are produced in the reticulo-endothelial system, of which Kupffer's cells of the liver sinuses are a part, they have proved experimentally that the presence of bile in the intestine, which so often has been considered purely an excretion, is necessary to life. There is clinical proof that bile is essential to life, and that the passage of all the bile to the surface of the body eventuates in death. The surgical mortality in patients with jaundice who have been properly prepared has been reduced from above 10 per cent to less than 3 per cent, as shown by Walters. Intravenous restoration of the calcium chloride exhausted by combination of the blood calcium with the bile pigments and salts rehabilitates the patient.

The liver acts on oxygen-poor blood. Eighty per cent of the blood in the portal circulation comes from the gastro-intestinal tract, and this is the source of supply of the nutritive material in the blood plasma. The remaining 20 per cent of the blood in the portal circulation comes through the splenic portion of the portal vein.

The spleen filters out various elements from the general circulation, especially degenerated red cells, or those of low value, which it sends to the liver for metabolic action.

And now we find that the lungs have a glandular function. Roger, a French experimenter, in a few concise pages, with a single illustration, suggests that metabolism of much of the fat is accomplished in the lungs. The fat is carried from the intestinal tract through the thoracic duct to the left subclavian vein and finally deposited in the arterial capillaries of the lung, into which it finally disappears. He demonstrates that the blood from the right side of the heart contains a much larger amount of fat derivatives than the left. The experiment leads us to believe that oxygen is necessary for the conversion of fat, and that the conversion of fat into a form suitable for bodily use is not primarily a function of the liver.

The surgeon is vitally interested in the elucidation of those problems relating to the circulatory system. We speak of the four vital organs: the heart, the lungs, the kidneys, and the brain. We study deaths following surgical operations, to find that the largest number are charged to pulmonary complications, and the next largest to the kidneys, while only a small number can be attributed to the central nervous system and the heart. Yet when we study the organ which has been charged with the death, we find very often that it was not primarily responsible, but merely the executioner.

We begin to see the liver as one of the great vital organs, and to realize that through its formation of the material which the blood carries to the tissues, the liver is acting constantly as a medium, not only of physiologic activity, but also of possible pathologic exploitation. We are becoming aware that many of the deaths which we have so confidently charged to one of the four so-called vital organs have a deeper significance. From now on the blood stream will be a most fruitful source of investigation of the vital phenomena. The need for the future in the elucidation of the problems presented by the blood is not only fine analyses of morphologic conditions and of physiochemic factors, but also the ability to see the relation of the function of the blood to the function of the whole body without becoming lost in the multiplication of detail; this will require a man of vision like Adam Smith, who laid down principles in political economy which have endured.

So much for the studies of the blood connected with metabolism. What of foreign substances

which have gained entrance to the blood stream? In this connection a fifth function of the liver which must not be forgotten is that of the detoxication of poisons, such as chloroform, phosphorus, and arsenic, and the destruction of microörganism brought to it from the portal circulation. By examination of the blood for bacteria severe types of infection can often be demonstrated, especially in cases of acute bacterial endocarditis. The presence of bacteria in the blood, however, does not always foretell the death of the patient, because the resistance of the tissues is an important factor. The use of mercurochrome by Young and Piper to kill bacteria circulating in the blood stream opens a new and most promising field of therapeutics. And Abel, through his experimentation with dialyzation of the blood, has shown the possibility of removing various toxic substances from the blood by passing the blood stream outside the body through

mechanical filters for cleansing, and back into the circulation.

It is not my purpose here to discuss this subject in detail, but simply to call attention to the fact that our best means of studying many disease conditions is through the contents of the blood stream. By studying the blood we shall steadily come close to the origin of many disorders, and, eventually, by earlier diagnosis, shall be able to remove from the blood stream the causative deleterious agents, and to restore the affected organs to a higher state of efficiency.

I have been privileged to see my colleagues, the internists and the laboratory workers, evolve methods of precision for examining the blood, and successfully apply the results to the rehabilitation of the patient whose condition formerly would have precluded operation. This work has made possible one of the most striking advances in modern surgery.

TREATMENT AFTER ABDOMINAL OPERATIONS*

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A prominent surgeon has remarked that, as a general statement, it may be said that the result of an abdominal section is determined when the patient leaves the operating table. It is but expressing a truism to add that this result is profoundly conditioned by the correctness and accuracy of the diagnosis, by the preparation of the patient before the operation, and by the skill with which the operation is performed; therefore, it is not paradoxical to say that the post-operative care begins before the operation is undertaken. Without going extensively into the subject of preparatory treatment, it may be in order to mention, briefly, some of the things which will contribute to the comfort and safety of the patient and diminish the risk of complications and thus directly affect the post-operative care.

It is unnecessary to dwell upon the importance of a correct and complete diagnosis. Upon it depends the planning of the entire conduct of the case. Upon it depends, not only the avoidance of gross errors, but also the recognition and proper appraisal of all the factors which affect the risk of the operation in the particular case in hand and the patient's ability to withstand them. It helps the surgeon to decide upon the type of operation that will best meet the requirements

and will prevent, on the one hand, the multiplication of incisions, and, on the other, the difficulties and incompleteness that result from an incision improperly planned. Although a surgeon should not begin an operation with his mind set upon his preconceived ideas, but must be prepared at any time to change his entire plan of procedure as some unforeseen condition arises, such emergencies are not conducive of equanimity even in the most experienced operators, and their avoidance by a careful diagnosis is most desirable. At best, our knowledge is imperfect, and from this arises most of our problems of post-operative treatment. At a staff meeting of one of our foremost surgical clinics recently there were reported five cases of pulmonary embolism. This complication was unforeseen at the operation, although, undoubtedly, the train of circumstances which led up to the disaster had its origin at that time. We can never say at the conclusion of an operation, "This is a finished piece of work; now, let nature take its course." The unforeseen is continually happening, and every effort must be made to reduce the occurrence of these unforeseen accidents. Herein lies the great value of the so-called "surgical judgment," which is a compound of knowledge, experience, and common sense.

The subject of the choice of anesthetic is sufficient in itself to fill the hour, and the bare men-

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tion of it is enough to start a lively debate. For my present purpose it will suffice to say that there is no one best anesthetic. The entire case, meaning the patient, plus his disease, plus the surgeon (it must be admitted that the surgeon is sometimes a serious complicating factor) must be taken into consideration, and the anesthetic chosen which will best fulfill the requirements of the individual case. I am sure that that is oracular enough to satisfy all factions. Whatever anesthetic is chosen, the administration of morphine and atropine hypodermically before the operation (unless there is some strong reason against it) contributes greatly to the patient's comfort before and after the operation, lessens the amount of anesthetic required, and probably aids in the prevention of shock.

The preparation of the alimentary tract has such an important bearing on post-operative comfort that mention of it should be made. The tensely distended abdomen and the gas pains of which practically all patients complained not so many years ago, are comparatively infrequent to-day, and I attribute much of this improvement to the absence of the cathartic which formerly constituted an important part of the routine pre-operative treatment. If, as Gardner believes, true constipation is comparatively rare, but most cases of so-called constipation are really cases of spasticity of the colon, it is easy to understand why a strong physic the day before an operation could be responsible for much discomfort and distension on the day after. If a laxative must be given, it should be given two or three days before the operation. It seems to me that I have heard fewer complaints from abdominal pain and distention since I adopted the practice of permitting the patient's usual habits largely to govern the use of laxatives.

Proper clothing and avoidance of unnecessary exposure and chilling while transporting the patient to the operating room and during the preparation of the patient on the table will undoubtedly prevent a certain number of complications and much post-operative discomfort. The chest and extremities of the patient should be kept covered with blankets. The use of large quantities of fluids in the preparation of the field of operation on the operating table is happily going out of vogue and is being replaced by simpler methods. Bacteriologic tests have shown that the skin of the abdomen of persons of cleanly habits is relatively sterile, harbors very few pathogenic bacteria, and may be rendered safe for operation by the application of some simple antiseptic. Tincture of iodine is probably the one most common-

ly used, and for the purpose of the present discussion it is necessary only to call attention to its irritating properties in some individuals and to warn against permitting it to flow down the sides of the patient where the rubber pad will prevent its evaporation and thus cause blistering of the skin. I feel sure that much unnecessary backache and other discomfort after the operation are due to the use of thin hard pads on the table on which the patient must lie in a rigidly extended strained position. The pad on the table should be such as would be reasonably comfortable to a patient not anesthetized. This, with a slight flexion of the knees and moderate elevation of the head and shoulders, will prevent much post-operative backache.

In the conduct of the operation itself many elements enter which affect the subsequent course of the case. Assuming that the diagnosis is correct, the operation properly planned according to the diagnosis and performed with technical skill, I would like to emphasize the importance of the gentle handling of tissues and organs. During my interne days it was customary to perform operations on the skull with chisel and hammer, every blow jarring the patient's entire head, and it seemed as if the patient, though unconscious, must be suffering damage from those repeated blows. Scientific proof that a general anesthetic did not protect against these harmful stimuli came later, and with it Crile's principle of anoci-association. A logical sequence was the rapid development of local anesthesia, the success of which involves clean dissections and gentleness in handling tissues. It should not be forgotten that these are equally important in operating under general anesthesia and that post-operative pain, shock, and danger of infection will be lessened if we observe the rule of gentleness.

Improvements in pre-operative diagnosis and treatment, in the administration of anesthetics and in operative technic have greatly simplified post-operative treatment. Unforeseen complications, shock, and infection are less frequent, and the pain and discomfort that accompany any operation are materially reduced. Noble, in Kelly and Noble's work on "Abdominal Operations," published in 1907, has a chapter on after-treatment in which two pages are devoted to the "glass tube," and another two pages to the "gauze drain" with a separate paragraph on "how to remove a gauze drain." Without going into a discussion of the subject of drainage, it is fair to say that at the present time the space devoted to the glass tube could be considerably reduced, and it is to be hoped that before long the con-

sideration of the gauze drain as used at that time may be eliminated entirely.

The protection of the patient against chilling is even more important after the operation than before, for the skin may be moist and the clothing damp from perspiration. Warm dry clothing should be put on and the patient gently lifted from the table on to a stretcher on which has been arranged a folded blanket containing warm water bottles. When the patient is ready to be moved this blanket is unfolded and the patient laid upon it and immediately wrapped in the blanket. The lifting of the patient is facilitated by a piece of canvas about eighteen inches wide and long enough to extend across the operating table and a few inches on each side. This is placed upon the table, at about the point where the patient's hips will lie, before the patient is brought in, and is used as a lifter when he is to be transferred to the stretcher. The bed should be warmed, and the patient is transferred to it from the stretcher without being taken from the warm blanket.

Within the limits of safety and taking due consideration of the nature of the operation, the posture of the patient, to a considerable extent, may be determined by his own preferences and habits. Each individual has usually a position in which he is in the habit of lying and in which he is most comfortable, and, as a general rule, he may be permitted to assume that position; also a reasonable freedom of movement may be permitted, although frequent turning from side to side in the hope of being more comfortable is to be discouraged and the more quiet a patient will remain the more quickly will the injured tissues cease to protest. A very slight change of position, such as can be accomplished with no disturbance to the patient or his wound, may be all that is needed to give rest and comfort, and a thin pillow under the small of the back will often give marked relief from backache. Willy Meyer strongly advocates the elevation of the foot of the bed thus producing a slight Trendelenburg position, and he states that since he has adopted it for all operations below the level of the heart, he has not seen femoral thrombosis develop in a single case. He explains femoral thrombosis on anatomical and physiological grounds based on researches of Aschoff, and he is convinced that this position overcomes the slowing of the circulation which predisposes to thrombosis.

The Fowler position is so well known as not to require extended description. It is almost universally used in cases of peritonitis, although there are some surgeons who do not favor it. It is impossible to maintain it effectively and com-

fortably by any extemporized contrivance, but wherever possible a bed especially constructed for it should be used. Meyer, following out his theory of the causation of femoral thrombosis, cited above, warns against keeping a patient in the Fowler position for too long a time, and sets three days as the limit of safety. He advocates, in cases of perforation of a hollow organ, of peritonitis, or in any case in which drainage is required, what he calls the "abdominal position," which is a semiprone position resembling Sims' position. The patient may be on either the right or left side, and either the foot or the head of the bed may be elevated, according to the requirements of the case. A case in which the Fowler position is indicated would have the head of the bed raised and the prone position would favor drainage from both lumbar regions and from the small pelvis. Whatever benefit there is to be expected from any special position will probably have been accomplished in three days, and after that time it will be safe for the patient to assume any position he desires. No patient should be permitted to remain continually in one position, and the more feeble the patient, the more important it is to change the position several times a day for its effect upon the circulation and for the prevention of hypostatic pneumonia.

Thirst is an almost constant sequel of any operation and with few exceptions may be satisfied by giving water by mouth unless the patient is too nauseated. After abdominal operations proctoclysis is started as soon as the patient is returned to bed. Some surgeons anticipate thirst still further by administering water (from a pint to a quart) per rectum before the patient leaves the operating table. If for any reason water cannot be given by rectum it may be given by hypodermoclysis or, in an exceptional case, intravenously, using physiologic salt solution or a solution of glucose.

Pain will be controlled for some hours by the hypodermic injection of morphine, which is given before the operation. When its effect has passed off, if the patient complains of pain all removable causes of it should be sought, dressings inspected and readjusted if uncomfortable, painful pressure of bandages removed, position of the body changed, and all those services performed which come under the heading of good nursing. If these do not give relief, morphine may be repeated, giving a large enough dose to produce results. I have never seen any ill results from giving sufficient morphine during the first day or two to keep a patient reasonably comfortable, provided that a sufficient quantity of water is

taken at the same time. The need of it seldom persists after the second day, and any severe pain after that time should arouse the suspicion that some complication is developing. It goes without saying that pain due to an over-distended bowel or bladder, or to peritonitis, or to an abscess, must be treated by removing the cause.

The post-operative care of the bowels follows the same general lines as the pre-operative. The routine use of a laxative on the third day after operation has been responsible, it seems to me, for a good deal of unnecessary distress and for much of the so-called gas pain, which is simply peristalsis over-stimulated by the medicine. Use of the rectal tube and a small enema may be all that is needed to restore the normal action of the bowels. If they fail, a mild laxative may be given, such as mineral oil, milk of magnesia, or one of the phenolphthalein preparations. Simple distension of the bowels with gas is so common that it can hardly be regarded as a complication and is usually relieved by the use of the rectal tube or an enema. If a simple enema is not effective, the so-called Noble's enema, containing turpentine, magnesium sulphate, and glycerin, will often bring relief. If these measures are not effective some other cause of the distension must be sought.

Many patients have difficulty in voiding urine, but before any measures for relief are taken it should be determined whether the bladder is distended or not. Unless there has been a liberal intake of water the kidneys may secrete but a small quantity of urine, and a conscientious nurse may be unnecessarily anxious because none has been passed. The routine use of the catheter after a stated number of hours is usually unnecessary, but that is probably the worst that should be said of it. The careful use of a clean catheter in a bladder that has not been injured by over-distension, probably never does any harm, for a healthy bladder is not easily infected; nevertheless, in some cases after the catheter has been used once the patient begins to depend on it, and it is better to restore the normal function as soon as possible. The administration of an enema will frequently bring about a normal emptying of the bladder.

Of all the complications of operations in the abdomen, distension of the bowels is the commonest, and, if it is not relieved in a reasonable time by simple remedies, one of the more serious complications must be considered, namely, paralytic ileus, obstruction of the bowels, or acute dilatation of the stomach. Paralytic ileus fre-

quently signifies peritonitis, but not always, for it may follow an operation in which very little injury has been done to the peritoneum; in fact, it may be present after some apparently trivial injury to the abdomen in which no other symptoms or signs of peritonitis develop. It comes on early and is marked by absence of peristalsis. Vomiting is present. The diagnosis of this condition is often difficult. Its most characteristic features are its early appearance in a case in which peritonitis was not present at the time of the operation and in which there was no apparent cause for peritonitis in the operation itself, such as extensive dissection, excision of bowel, etc., and in which other signs of peritonitis are absent. Under these conditions enemas may be used, as in simple distension; possibly on the homeopathic principle of "*similia similibus*" an asafetida enema has seemed to be beneficial at times. Of the drugs which stimulate peristalsis, pituitrin is probably the most efficacious. It will certainly stimulate peristalsis, but before it is used the possibility of peritonitis or mechanical obstruction must be excluded, and Gibbon lays down the rule that it should never be used for the relief of distension coming on after forty-eight hours after an abdominal operation. Patients will derive much comfort from large hot stupes reaching from flank to flank and from ensiform to pubis, and since these are applicable also to cases of peritonitis they may safely be used until a definite diagnosis can be made.

Obstruction of the bowels may be mechanical or may be due to sepsis. The commonest cause of mechanical obstruction is adhesions, usually of the bowel to some fixed point, such as the abdominal wall, the stump of the uterus, or the mesentery. It usually occurs five or six or more days after the operation, and the symptoms develop insidiously, being ushered in with intermittent, colicky pain, and inability to move the bowels. Vomiting follows quickly if the obstruction is high; distension if it is low, with vomiting coming later. Quoting Gibbon again, "Visible peristalsis with distension is absolutely indicative of mechanical obstruction."

Septic obstruction means peritonitis with paralytic ileus. There is the distension without peristalsis, but to it are added the characteristic signs of peritonitis, the persistent vomiting, pain, rigid abdomen, restlessness, and the facial expression typical of peritonitis. Later there may be absence of pain, but increased apprehension on the part of the patient.

As for the treatment of mechanical obstruction, it will suffice for our present purpose to say that

it is operative, and, if the condition is positively diagnosed, it should be regarded as an emergency as acute as a case of strangulated hernia. The treatment of septic peritonitis is entirely different. The futility of attempting to drain the peritoneal cavity has been demonstrated; on the other hand, the astonishing ability of the peritoneum to overcome extensive infections has also been seen in many cases. Oschner taught us the value of rest and avoidance of things that increase peristalsis in aiding the peritoneum in the contest. Bearing in mind these principles Crile devised his plan for the treatment of peritonitis, which consists in rest, the administration of large quantities of water by bowel, and the application of large hot stupes to the abdomen. Rest and quieting of peristalsis are secured by the administration of morphine in full doses, taking the rate of respiration as a guide and giving the drug until the rate is reduced to as low as 10 to 14 per minute. At the same time large quantities of water are given by proctoclysis or hypodermoclysis. Localized collections of pus should be evacuated.

Acidosis or diminished alkalinity of the blood is present in greater or less degree after any operation and may, indeed, follow a great variety of causes, psychic, as well as physical. In its severe form it is manifested by vomiting, thirst, sweating, increase in pulse rate, the odor of acetone on the breath, and the presence of acetone and acid bodies in the urine. In extreme cases all the symptoms will be aggravated and the patient will pass into coma, and death will ensue. Crile reports that his studies of the subject determine that "the brain, adrenals, liver and thyroid, and the muscles together play important parts in energy transformation and that at least three of these organs, the brain, adrenals, and liver, are especially concerned, also, in the neutralization of the acids resulting from energy transformation." The lowering of the alkaline reserve may be due to a variety of causes,—to disturbed metabolism (for example, diabetes), to starvation, to hemorrhage, or improper elimination, and it is related to some forms of surgical shock. The substances which are responsible for the lowering of the alkalinity of the blood are products of incomplete metabolism of fat, namely, acetone, diacetic acid, and B-oxybutyric acid. In the mild degrees of acidosis, which, as has been stated, follow the administration of any general anesthetic, the condition will rapidly disappear, especially if generous quantities of water are administered, but in the severe cases the vomiting aggravates the acidosis and the acidosis in

turn causes more vomiting, thus establishing a vicious circle in which the patient's condition may become critical. The natural inclination of the physician would be to attempt to neutralize the acid bodies by the administration of alkalis, and this, indeed, may be of some value, but the complete failure of this method of treatment in the acidosis of diabetes with coma shows that there is some more subtle chemistry involved than simply the neutralization of acid by an alkali. Practically no cases of diabetic coma have been relieved by the alkali treatment. There seems to be no essential difference between the acidosis of diabetes and the non-diabetic acidosis seen in the cases (both before and after operation) in which there have been prolonged starvation, vomiting, and dehydration. In both there is impaired carbohydrate metabolism, leading to incomplete oxidation of fats, but the difference is that in diabetes sugar is present in excessive quantities, but the tissues lack the ability to utilize it, while in the non-diabetic conditions there is a lack of sugar. This line of reasoning has suggested the use of glucose intravenously followed by Insulin given subcutaneously, and there are a good many reports of cases treated by this method apparently with marked benefit as shown by the cessation of vomiting and rapid improvement of all the symptoms.

The method is to inject intravenously a 10 per cent solution of glucose, usually in quantities of from 500 c.c. to 1,000 c.c. This should be introduced very slowly, consuming an hour or more in administering the solution. The amount of Insulin to be used depends upon the amount of glucose injected, one unit of Insulin being given for every three grams of glucose. In that proportion there is a good margin of safety, and the patient is protected against hypoglycemia due to the injection of too much Insulin; in fact, the patient will frequently show sugar in the urine. The amount of Insulin to be given is divided into two equal doses, one being given subcutaneously five minutes after the injection of the glucose is begun, the other when it is completed.

The subject of post-operative treatment requires the mention, at least, of surgical shock. Ashhurst's "Encyclopedia of Surgery," 1881, defines shock as "a sudden check of the circulation brought about through the agency of the nervous system. All symptoms point to some failure among those forces that maintain the circulating fluid at the necessary tension; to some difficulty affecting the motor impulse of the heart, or the *peripheral resistance* of the capillaries or the state of tone of the smaller vessels, arteries, as well as veins, for these are the forces mainly

concerned in keeping up the arterial pressure on which the circulation depends." Thirty-five years later Crile writes "*Peripheral resistance* determines the height of the blood pressure, no matter how swift the stream or how great the volume of blood. Loss of peripheral resistance is the final cause of the condition which we call "shock," regardless of the immediate cause, whether it be a severe nerve injury or extensive muscle injury with absorption of toxic substances."

No comprehensive theory can explain all cases, for shock may be associated with nerve injury, hemorrhage, extensive laceration of tissue, especially muscle, or severe infection; but in all cases the result is the same, that is, a lowering of blood pressure, which, if it persists long enough, will result in irreparable damage to the nerve centers. Crile found that in experiments in which the blood pressure had been lowered by reasonable hemorrhage alone, saline infusion promptly restored the lost pressure; but if the pressure had been lowered by exhaustion of the vasomotor nervous system by afferent impulses set up by injury to the cerebrospinal or sympathetic nervous system, the infusion would restore the pressure only in proportion to the vasomotor exhaustion, and, if that exhaustion was complete, the infusion had no effect because there was no peripheral resistance to maintain the blood pressure. In any case, the time element is of great importance because prolonged low pressure causes damage, which cannot be repaired by any method of treatment.

Traumatic shock, such as is seen in wounded soldiers or in victims of industrial accidents, is not necessarily accompanied by acidosis, although in the majority of cases acidosis is present. Anything that lowers blood pressure tends to lower the alkaline reserve; in other words, to produce acidosis. In the shock seen after abdominal operations acidosis is practically always present; in fact, patients that are in shock after the operation frequently have had acidosis before it. The con-

dition for which the operation was performed has resulted in starvation, dehydration, prolonged physical and mental suffering, or sepsis.

The remarks made on the treatment of acidosis are, therefore, applicable also to the treatment of shock. Encouraging reports are being received of the treatment of shock by the administration of glucose and Insulin, and in some instances it seems possible that even exhausted nerve centers have been restored to function by the glucose which is rapidly transformed into energy by the oxidizing action of the Insulin. Glucose alone may be of some benefit, but the saving of time which is of such importance in the treatment of severe shock is accomplished by the coincident use of Insulin which renders the energy of the glucose quickly and readily available to the tissues.

The saving of bodily heat is imperative and may be accomplished by the means already suggested. As soon as the patient can take them, hot drinks are also another means of introducing heat into the body. For pain and restlessness, morphine should be given until the patient is quiet and reasonably comfortable.

For restoration of blood pressure, the use of adrenalin, pituitrin, or other pressure-raising drugs, has no physiological basis. There is already a diminution of blood volume with stasis and concentration of blood in the capillaries. The use of adrenalin will temporarily raise blood pressure by still further contracting the arterioles, but the circulation is not benefited thereby for the blood volume remains the same and the circulation in the capillary areas from which, alone, the tissues can effect an interchange with blood, is not improved. War experience and experimental evidence indicate that blood-transfusion is the most effective means for the treatment of shock.

To sum up, the treatment of shock should consist in rest, posture with the head low, heat, fluid (glucose and Insulin, water by rectum), morphine, and blood-transfusion.

PROSTATIC CASES AND THEIR MANAGEMENT: A CLINIC*

By FRANKLIN R. WRIGHT, M.D.

MINNEAPOLIS, MINNESOTA

I have no intention of giving a prepared address, but want to tell you how we treat prostatic cases and the methods we use in preparing them for operation. Our methods have led us to very

satisfactory results. We have not had an operative death at the University Hospital for over three years. We have from one to four cases in the Hospital all the time. One death has occurred from hemiplegia.

I present this man because he is a very in-

*Presented at Minnesota Clinic Week, Minneapolis, April 30-May 2, 1925.

teresting patient. He began six years ago to have the ordinary symptoms of prostatic enlargement, that is, he had to get up at night and void his urine. A diagnosis of hypertrophied prostate was made at that time. This condition improved somewhat, but a year ago he began to be troubled again with frequent urination and began to loose strength. He went to another doctor, and was given some kind of pills. He took these for a while but gave them up because he thought they "upset his stomach" and did no good. Last July he became unable to work. He has not been in bed all the time but has been up and dressed and sat around in a chair outside the house during pleasant weather, but he has not worked. A few days ago he had a retention of urine, and was catheterized and sent to the Hospital. He is sixty-five years old. At the time he came in the following notes were made:

"Well-nourished and well developed man. Lying in bed. Complains of being tired, and feeling sick and nauseated. Very pale." He complained of nothing else.

He has no aches or pains of any kind. He is tired and unable to do anything. On physical examination nothing was found wrong with this man except a distended bladder. On rectal examination an enlarged prostate was found. He was catheterized and found to have 800 c.c. of residual urine. Both the medical and surgical staff at the Hospital examined this man, and nothing pathological was found about him except this enlarged prostate with the residual urine. At the time he was catheterized, after removing 800 c.c. of residual urine, the interne injected 500 c.c. of sterile water into his bladder so as not to relieve the back pressure against his kidneys too rapidly. We do not know the amount of urine he was passing in twenty-four hours before he was catheterized, but the day following he passed only 400 c.c.. This had a specific gravity of 1018. The third day he passed 400 c.c.; and on the fifth day 500 c.c. The treatment he received during this time was catheterization. His bladder was not emptied, but 100 c.c. of the residual urine was taken out, just enough to partially relieve the back pressure against his kidney. After three or four days the amount removed was increased to 200 c.c. and then 300 c.c., requiring four weeks to reach the point where his bladder could be completely emptied. His nausea and tired feeling slowly disappeared.

When he came to the Hospital, on March 7, the blood chemistry showed urea-nitrogen of 157 with creatinin of 7.32. Normal, you will remem-

ber, is 15 for urea-nitrogen and 1.5 for the creatinin. This is an increase of approximately ten times the normal. At the time he was catheterized blood chemistry was taken a number of times, gradually diminishing so that by March 22 urea-nitrogen had diminished to 40 and creatinin to 3. During this time there had been several flare-ups, the urea-nitrogen going one time as high as 168. This increase followed change in the catheterization, that is, when an increased amount of the residual urine was taken out thereby reducing the back pressure on the kidney the urea-nitrogen in the blood would increase, showing clearly that the reduction in back pressure in the pelvis of the kidney caused an increase in the faulty elimination by that organ, and calls very forcibly to our attention the fact that this reduction of back pressure must be very gradual. If it is done too rapidly we bring about an increase in the uremia and may cause even a fatal result.

Some men believe that no prostate patient should be operated on if the kidneys refuse to pass certain dyes; that is, they place their operative prognosis on the so-called functional test. The ability of the kidney to pass certain dyes, in our opinion, is of little value in these cases. We know these kidneys are damaged, and since they are submitted to the same influence we have the right to assume that both kidneys are damaged equally. The fact that they secrete urine sufficient to keep this man in reasonable health is proof of their function ability, and, if we have proven that they will continue to secrete this urine after they have been relieved of the back pressure from the residual urine, we cannot see that anything can be gained by proving that they will also eliminate foreign matter in the shape of dyes.

On March 19 this man was given the phenol-sulphonaphthalein test, failing to pass any dye. A functional test was run on him again this morning being finished at noon. He did not pass a trace. In spite of the fact that at the present time, the phenolsulphonaphthalein test on this man's kidneys is zero, he has improved in general health. His weakness and nausea have disappeared. Clinically, from his appearance, we would say that he is a very good operative risk. This man has lacked some of the symptoms of back-pressure uremia. Ordinarily these patients are tired and weak. They have gastro-intestinal disturbances and a harsh dry tongue. This man's gastro-intestinal symptom has been that of nausea, instead of either constipation or diarrhea,

which are the usual symptoms. His tongue has been continuously moist which is contrary to the rule.

In hypertrophied prostate we have the development in the prostate of a fibro-adenoma, and not an increase in tissue of the prostate itself. This condition in itself is entirely harmless. It makes trouble because it interferes with the function of other organs. The fibro-adenoma in the prostate will interfere with the function of the bladder so that it cannot empty itself, and there remains a certain amount of residual urine. If we have 100 grams of residual urine it backs up in the pelvis of the kidney and begins to get faulty elimination, and, sooner or later this trouble increases to a chronic uremia. We cannot say how long a man can stand back pressure without becoming uremic, but when a man with a hypertrophied prostate comes to us who is passing large quantities of low specific gravity urine, we know that the function of his kidney is disturbed. How this disturbed function is brought about is a question. In my opinion it is due to interference with the function of the loop of Henley, which, as you know, is to resorb part of the water poured out by the glomeruli.

Many of these patients have to be prepared for operation in their own homes or in a small hospital where it is not possible to make chemical analysis of the blood every two or three days. In preparing these patients we must have a clinical guide. This we find in comparing the specific gravity of the urine with the twenty-four hour output. These patients pass large quantities of low specific gravity urine. When the bladder is emptied gradually and a daily record kept we will find that the specific gravity slowly rises and the daily output slowly falls until we reach a certain point which varies in different patients according to the amount of permanent damage done to the kidney. During this catheterization period we watch the patient closely for signs of uremia or sudden suppression of urine. The earliest clinical sign of uremia is a dryness of the tongue. Whenever this occurs or whenever there is a sudden dropping in the amount of urine passed, catheterization should be stopped so that back pressure will be restored in the kidney until these symptoms have entirely disappeared; then drainage of the bladder is begun again and carried out

as before. When we find that the bladder can be emptied three or four times a day without the patient becoming uremic we put in a permanent catheter and keep the bladder empty. If a patient will go five to ten days with a permanent drainage of his bladder without becoming uremic he can safely be operated on.

The question, how long drainage shall be kept up, depends entirely on the physical condition of the patient. The patients who are in very poor physical condition should be drained longer than those who are fairly robust. It is our rule to continue this drainage before operation as long as the patient continues to gain in strength and general health; in other words, to let him make as much as possible of his convalescence before he is operated on.

The operation in itself is not severe if the patient has been properly prepared. The opening of the bladder is not a serious undertaking. Enucleation of the tumor is not accompanied with a great deal of shock. In our opinion the entire danger of the operation is in too rapid relief of the back pressure in the pelvis of the kidney.

The patients who have been carefully prepared take an anesthetic well. It has been our custom for a number of years to precede the anesthetic by an H. M. C. tablet (hyoscin, morphine, and cactin hypo.) The normal dosage of this is a Number 1 tablet for a patient weighing 140 pounds. This should be increased or diminished according to weight, and should be given an hour and a half before the patient is to be operated on. If, in three-fourths of an hour from that time, the patient is not distinctly drowsy so that he will have to be roused up in order to get him to answer if spoken to, one-half the dose already given is to be given. If this procedure is followed the majority of these patients have no recollections of being near the operation room or taking the anesthetic and are relieved of the mental distress of lying in bed waiting for the time of operation to arrive. Not infrequently the operation can be done entirely with no other anesthetic. In other cases gas or ether can be safely given as the surgeon prefers.

NOTE—This patient was operated on and had an uninterrupted convalescence. At the time he left the Hospital his kidneys were still zero to the functional test (phenolsulphonephthalein).

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of February 10, 1926

The Minnesota Academy of Medicine held its regular monthly meeting at the Town and Country Club on Wednesday evening, February 10, 1926, at 8 P. M. Dinner was served at 7 P. M. There were 28 members present.

The meeting was called to order by the President, Dr. H. L. Ulrich.

The minutes of the January meeting were read and approved.

This meeting was given over entirely to the presentation of clinical case reports, and the following members reported cases:

Dr. F. L. Adair reported two cases as follows:

CASE 1.—Mrs. H., aged 23. Patient had a normal menstrual period in November. The December period was a few days late. She had a fainting spell, and on one occasion complained of headache and soreness of the eyeballs. The diagnosis was possible pregnancy, with threatened abortion.

On January 26, 1926, the patient came to the office. She had flowed from January 22 to 24, not quite so much as normally, and no pain. She complained of dizziness and syncope, and lacked endurance. She had slight nausea in December after the fainting spell. She fainted on January 21. Had headache occasionally.

The pelvic examination was negative. Vagina: slight, thin, pinkish discharge. Adnexa: elongated mass in the right adnexal region, about 3 to 4 cm. in diameter. Diagnosis: tubal pregnancy.

On January 28 she was operated on; hydrosalpinx. Median abdominal incision was made; omental adhesions were freed; the right hydrosalpinx was removed, and right salpingectomy done. No drainage.

CASE 2.—Mrs. S., aged 43. Patient was first seen in April, 1922, aged 39; married three years; no pregnancies. She complained of constant pulling, dragging pain in the hypogastric region when on her feet. A generalized urticaria and generalized brownish pigmentation were noted. Her menses had occurred regularly every four weeks; duration six days, and associated with cramps in the lower abdomen during the flow.

The physical findings were negative with the exception of a third-degree retroversion of the uterus and possible gastroptosis. A pessary was inserted to correct the retroversion. This treatment was continued until April, 1925, when the pessary was removed. The patient was improved.

The skin condition improved after vaccination in November, 1924, but troubled her again in March, 1925, especially with her menses.

The patient was seen in August, 1925. She was very nervous. She was about two and a half weeks past her period, and the last time had gone over about ten days. The uterus was about normal in size, retroflexed, and retroverted third degree, not enlarged or softened, and no bluish coloration.

The patient was not seen again until December 18, 1925. She had had a normal menstruation in September and had been spotting ever since. The afternoon of December 18 she was seized with a sudden pain in the abdomen, felt faint, and went into collapse, and was found on the floor. Dr. J. D. ——— was called and found the patient in a serious condition, pale, rapid pulse, and some shock. A mass was palpable in the right lower quadrant of the abdomen, with considerable tenderness. Dr. J. D. ——— called me about 7:30 P. M., and I saw the patient about 8:00 P. M., at which time her pulse was almost imperceptible at the wrist. She was very pale and had thirst and air-hunger. Her blood pressure was between 30 and 40 systolic. She was immediately sent to the hospital and given a hypodermoclysis of normal saline solution. She was operated on under gas and local anesthesia.

The uterus was found with a large mass in the right horn, which had two points of rupture, bleeding into the peritoneal cavity. This mass was delivered through the incision and a supracervical hysterectomy was done. Some blood was removed from the abdomen, mixed with citrate solution, and replaced. Following the operation, the patient was very restless, went into collapse, and died.

Gross findings: A tender mass in the right lower quadrant of the abdomen. Peritoneal cavity was full of blood. Connected with the right horn of the uterus was a large mass so that the uterus was about three times normal size.

Final diagnosis: Intraperitoneal hemorrhage; probably ruptured interstitial pregnancy.

Dr. Emil S. Geist reported two cases of foreign body in the knee joint under the semilunar cartilage.

Dr. A. Schwyzer reported a case of carcinoma of the fundus of the gall bladder, and a case of carcinoma of the stomach.

Dr. Harry P. Ritchie showed a series of pictures of before and after operations upon congenital cleft lips. The results indicated that in the repair of this cleft the procedure was not a special hare-lip operation, but one of general surgery, that is, the union of a cleft sphincter muscle,—the obicularis oris. The exact outlines of this muscle could be demonstrated by the use of the faradic current.

CASE 1.—Mrs. C. E. McK., aged 33, female, married, weight 97¾ pounds. Complained of nervousness, insomnia, nausea and vomiting, diarrhea, tremor of hands, and loss of weight. She had had diseased tonsils removed November 20, 1925. She had had appendicitis as a child and smallpox at the age of 23. She had had asthma for ten years.

Physical examination: Head: hair abundant, acne on the face, eyes bulging, staring, nystagmus. The neck showed an enlarged thyroid, right lobe larger

than the left. Lungs were normal. Heart: rate 120; blood pressure, 170/80. Skin: iodism.

Laboratory: Urine: December 12, 1925, normal. Blood: January 16, 1925, Hb. 78 per cent; w.b.c., 6,800. Blood urea, 50. 92. Basal metabolism: October 18, 1925, 60 per cent plus; January 24, 1925, 45 per cent.

She was given Lugol's solution by rectum, luminal, quinin hydrochlorate, bromides, and special diet.

Thyroidectomy was performed December 29, 1925. Pathological report: colloid acid fetal adenomata.

While in the hospital the pulse and blood pressure came down to normal in two days; no fever; and the patient made excellent progress. In four weeks she weighed 103¾ pounds.

The interesting points in this case are: (1) the pronounced toxic symptoms,—loss of weight, diarrhea, vomiting, high blood pressure, rapid pulse, inability to take Lugol's solution by mouth, and high basal metabolism; (2) the regaining of weight and normal health.

CASE 2.—Miss G. E. V., aged 19 female, single, weight 110 pounds, height 5 ft. 7 in. Patient complained of tremor, nervousness, insomnia, difficulty in swallowing, loss of weight, and goiter.

The patient was told that she had a goiter as a child. This fall she noticed the gland enlarged and so consulted a doctor, who prescribed Lugol's solution last September. During the last month she became nervous, had nervous spells in which she had tremor of the hands, sensations of choking, and then fainted. Patient lost ten pounds this winter. She becomes easily fatigued. Her hands often tremble and perspire freely. Her eyes blur and ache.

The patient had measles and diphtheria as a child; influenza in 1918; and has had tonsillitis frequently. Her menses began at the age of 15, pains during and after, irregular 10 to 40 days, duration 4 days.

Physical findings: Eyes, frequent winking, nystagmus, lid lag, staring. Tonsils, inflamed, cryptic, and submerged. The thyroid is definitely enlarged, right lobe nodular. Heart, rate 90; blood pressure, 114/80. Lungs, negative. Breasts have small palpable nodules. Reflexes, normal. Skin is ruddy, warm, and moist. There was acne present. The uterus is retroflexed, movable, and of normal size. The ovaries are prolapsed.

Laboratory: January 11, 1926, Hb., 85 per cent; w.b.c., 7,100; February 9, 1926, Hb., 90 per cent. Urine, January 11, 1926, negative. Basal metabolism, January 11, 1926, plus 03 per cent. Eight days after operation, plus 37 per cent.

Thyroidectomy was performed January 12, 1926. Both lobes were enlarged about two and a half times the normal size, the right being irregular and nodular. The left lobe extended more posteriorly than the right, and was uniformly enlarged.

Tissue report: Section showed acini very large and containing deeply staining colloid. Cells were low cuboidal. There were nests of round cells in the interstitial tissue which may indicate past activities.

Course in the hospital: Before the operation the pulse was 90, temperature 98.6°, respiration 20. After the operation the pulse was 130, temperature 102°, respiration 28, for five days. Then the pulse was

120, temperature 99°, and respiration 28, for eight days. Then, for three days, pulse was 100, temperature 98.6°, and respiration 25. After that the pulse was 90, temperature normal, and respiration 22.

After leaving the hospital, the blood pressure was 100/50 on February 9, 1926, and the pulse was 84.

The interesting points in this case are the following: (1) goiter symptoms, but the preoperative basal metabolism was plus 03; (2) postoperative at eight days, the basal metabolism was plus 37, pulse rapid, and patient very nervous; (3) return to practically normal health and absence of nervous symptoms at the present time.

CASE 3.—Mrs. A. C. U., aged 41, female, married, weight 175 pounds. Complains of nausea and vomiting, constipation, nervousness, sallow skin, and backache.

The patient had had measles, scarlet fever, small-pox, and rheumatic fever as a child, and diphtheria at the age of twenty, and influenza in 1919. She had had an appendectomy and salpingectomy in 1907, and tonsillectomy in 1919. She has bronchitis during the winter. She had had eczema on the scalp and ears for months. Has had backache for years.

She smokes about ten cigarettes daily, and drinks liquor at times. Her father died at 68 of gastric cancer, and one sister died of pulmonary tuberculosis.

Physical examination: The skin is sallow and icteric; eczema on the scalp and ears. The eyes are staring. Teeth, negative. The thyroid is enlarged. Blood pressure, 124/80. Abdomen: tenderness and resistance along the right costal margin. The liver is high, and the liver outline is smaller than normal. Leucorrhea. Rectum is tender.

Laboratory: Urine, normal January 19, 1926. Blood Wassermann, negative. Blood: January 18, 1926, Hb., 70 per cent; w.b.c., 7,300; r.b.c., 4,460,000. Basal metabolism January 2, 1926, 12 plus.

X-ray showed no evidence of ulcer in stomach or duodenum. Chronic gall-bladder pathology.

Pathological: There is a slight intralobular infiltration with round cells, some areas showing a little hemorrhage. The liver cells are rather pale. I do not know the cause, but some degeneration often occurs with gall-bladder diseases. (Grave.)

Operation: Pylorus patulous. Adhesions were found beyond the pylorus around the duodenum, but no sign of ulcer. The middle portion of the ascending colon was restricted and held down in the upper abdomen, resulting in kinking. Small nodules through the liver resembled small stones which can be palpated and apparently moved from their location. The liver is mottled and smaller than normal. The right ovary is cystic, and there is compensatory hypertrophy. The left ovary is 1.5 inches in diameter, irregular, and fibrocystic. Small subserous fibroids, the size of a pea, were found on the uterus. Cholecystotomy was performed.

Progress in hospital: Bile drainage for ten days; patient vomited for five days after operation.

Interesting points in this case are the following:

1. Some symptoms of diseased thyroid, basal metabolism plus 12.

2. Definite symptoms of gall-bladder disease before operation.

3. The lack of pronounced pathology of the gall-bladder.

4. Definite liver pathology.

5. Apparently returning health.

Dr. H. L. Ulrich reported two cases of eventration of the diaphragm, one of the right side and

the other of the left side. X-ray plates of both cases were shown.

Upon motion the meeting adjourned.

JOHN E. HYNES, M.D.

Secretary.

PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of February 18, 1926

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening February 18, 1926, at 7 P. M. Dinner was served at 6 P. M.

The meeting was called to order by the President, Dr. J. S. McCartney.

The minutes of the January meeting were read and approved.

The annual election was held and the following officers were elected for the ensuing year:

President.....Dr. R. C. Webb.

Vice-President.....Dr. Kenneth Phelps.

Secretary-Treasurer.....Dr. Donald McCarthy.

The scientific program of the evening consisted of two papers.

Dr. C. A. Boreen read a paper entitled "Progress in the Treatment of Syphilis."

DISCUSSION

DR. LAJOIE: I wish to ask Dr. Boreen about the case of a patient who has false teeth. There could be no blue line on the gums in that case? Is it advisable to treat a patient seventy or eighty years old? Does 0.6 gram of sulpharsphenamine seem to be too much?

DR. BOREEN: I have never used as high as 0.6 gm. I use on an average of 0.3 gm., giving it both intravenously and intramuscularly. So far as blue gums are concerned, bismuth is not very toxic, and there is not much danger in giving bismuth except to a patient who is very much run down. I think it is perfectly safe to treat patients sixty or seventy years old, particularly if you use sulpharsphenamine.

DR. ANDERSON: I would like to ask, if you are getting therapeutically good results with bismogenol, would you continue with it rather than changing at intervals to mercury and arsenical preparations? I have found that it does not give any pain.

DR. BOREEN: Bismogenol is very good, but it is a very expensive product, and I think the other two are just as good. Bismuth salicylate does not give much pain. I have not had any complaint with either of the others given intramuscularly. I think bismuth is going to take the place of the others, and certainly it does not give the local reaction that mercury salicylate gives.

DR. KING: I think nothing can take the place of salvarsan for syphilis, yet when you get patients who have an idiosyncrasy to mercury it is good to know of something to take its place.

DR. BOREEN: I want to mention a case I saw a few days ago which was a rather unusual case of syphilis. The woman had a gumma of the frontal bone. She had got into the hands of a chiropractor, who had been treating her. She gave a typical history of having syphilis, had had two or three miscarriages, and had this typical gumma of the frontal bone.

I really do think there has been some progress made in the treatment of syphilis. We know that arsenic has been used for twelve or thirteen years, and I think that bismuth salts are going to prove to be of some success in our method of treatment and that bismuth is going to supplant arsenic entirely.

Dr. Rood Taylor read a paper entitled "Colic in Infants."

DISCUSSION

DR. LAJOIE: Duke, of Kansas City, brought out the fact that a good many adults have an allergic condition of the bladder and mucous membrane of the gastro-intestinal tract. Somewhere I got the idea that colic in infants may be produced by an allergy to some milk which infants take. In my own family I found that if a child was given a large amount of food to which it was not accustomed the child became ill, but, if given a very small amount at first, and the amount gradually increased, the child had no trouble. I know parents who have children five, six, or seven years old who still have to be careful about what their children eat.

DR. ANDERSON: One point Dr. Taylor brought out was interesting to me and that was the question of the amount of breast milk a child should have and also overfeeding with breast milk. I agree with him that very exceptionally do you see an infant overfed. They vary in the amount they need. One child of six weeks whom I saw required ten ounces to make him happy. The mother had an unlimited amount of milk, and he could take nine or ten ounces. I think very commonly children one month of age require six or seven ounces to satisfy them. On the other hand some children require much less. There seems to be an individual variation in children as to the amount the child uses, and to be guided by the text-books, in regard to the amount of breast milk to be given at different ages, is entirely wrong.

DR. ZIEROLD: I am unable to add much to the discussion, but would like to ask some questions. I am rather curious as to what is the normal stool in infancy. I can find no very exact idea of what is normal. Another point I would like to ask about is the period of time between the emptying of the stomach and the complete evacuation of the intestinal tract. I am wondering if there has been any work on infants similar to Alvarez's observations on the normal stool of adult life. Normally, the stool should be alkaline, but if an acid stool is the normal for infants then the whole intestinal tract must be acting the same as the small intestine.

I would also like to ask if there is a difference in the calcium content of breast milk and cow's milk sufficient to have any effect on the stool and if this calcium content is a factor in the passage of feces from the bowel. I am interested in this, not in the matter of feeding of infants, but in the after-care of cases I come in contact with surgically.

I would like to ask Dr. Taylor if there is evidence of increased tolerance to atropin in these spastic, colicky cases.

DR. TAYLOR (closing): I don't know anything about allergy to normal protein in breast milk or, a baby being allergic, to proteins of human breast milk. I have taken it for granted that they were not.

With regard to the baby being upset by large amounts of new food: it is a matter of experience that one must start in with new foods rather slowly. The child gets along much more comfortably if new foods are not given in large amounts, but if a food does not agree with a child in a small amount it does no good to go on and give larger amounts. If sensitive to a food, he is apt to continue to have trouble.

Dr. Anderson mentioned the amounts of feedings. The largest amount I have ever seen taken was twelve ounces. That brings up another matter I did not discuss. It is not a very good thing to weigh the baby before and after nursing. A baby with colic should be fed and put down to sleep. The main thing is knowing that the baby should get enough and not to worry but to give him all he will take.

Now as to what is the normal stool for infants? I could answer Dr. Zierold as to what is the normal stool for a breast-fed baby of one month, three months, or six months, and I could tell what is the normal stool for a baby fed on milk, for instance. In general, a breast-fed baby in the first two months does have acid stools. That is due simply to increased speed of passage through the intestinal tract.

The giving of calcium was also mentioned. I have used calcium in feeding babies with colic and am rather inclined to think it helps some of these children; and cow's milk does contain more lime than breast milk and makes for alkaline reaction and slower motility through the intestinal tract, and that is the reason a baby on cow's milk might have an alkaline stool.

I do know that there is a very great variation in the amount of atropin a baby can stand. Babies vary tremendously in the amount of atropin required to give any therapeutic results.

—DONALD MCCARTHY, M.D.,

Secretary.

BOOK NOTICES

THE PRACTICE OF PEDIATRICS. By Charles Gilmore Kerley, Attending Physician to the New York Nursery and Children's Hospital, and Gaylord Willis Graves, Associate in Diseases of Children in the College of Physicians and Surgeons (Columbia University). Third edition; cloth. Price \$9.00 net. Pp. 922, with illustrations. Philadelphia: W. B. Saunders Company, 1925.

Kerley's Practice of Pediatrics is an excellent book for the pediatrician, student, and general practitioner who has a good many infants and children to treat. It gives a very complete study of the subject of pediatrics as met with in the daily run of practice. It takes up each branch and subject, giving fully the etiology, symptoms and treatment of each. This book of 900 pages is divided into sections as follows, each of which will well repay the reader.

Nutrition, growth, development. This chapter gives a brief but very complete review of the normal infant and when to look for certain developments which the mother is very anxious to know and is of utmost importance to the physician.

From here we pass to "Infant Feeding," also including artificial, as well as material. The various ills which beset the infant due to disorders caused by indigestion are included.

The "Preschool Child," so important and generally passed over lightly, is dealt with fully. After giving full details in examination and diagnosis, the diseases according to the systems are taken up in order. It starts with the "Newborn" and takes up the various conditions present, such as asphyxia neonatorum, mastitis, gonorrheal ophthalmia, etc.

The gastro-intestinal tract next comes into play, starting with the mouth an desophagus, diseases of the stomach, intestines, and so on down, including the liver, etc. In this section each subdivision is fully taken up.

"Diseases of the Respiratory Tract" is a chapter dealing with the various ills peculiar to that system, with a special chapter given to heliotherapy. We then turn to "Diseases of the Heart and Blood," so important to the health of a normal child.

The glandular system is fully described, as well as all its associated diseases, with a complete differential diagnosis of each of the endocrine disorders.

The urogenital system is taken up in detail, then the affections of the nervous system, not omitting "Progressive Muscular Atrophy." Following this the various skin diseases with eczema holding the foreground.

The rest of the book takes up the disturbances of metabolism, diseases of muscles, bones, and joints and various miscellaneous subjects, such as obscure elevation of temperature, anaphylaxis, foreign bodies, etc.

At the close of this book is a chapter dealing with drugs and dosages. So, in all respects, this book gives a very complete review of the subject of Pediatrics from all angles.

—MARY H. JENNINGS, M.D.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations
The Hennepin County Medical Society
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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MAY 1, 1926

THE A. M. A. MEETING AT DALLAS

On the sixteenth of April medical men began gathering in Dallas, although the meeting did not begin until the following day. But there were evidently many who wanted to see what Texas looked like and how Dallas was going to entertain the august body of the A. M. A.

Our first thought was to compliment Dallas on its city-like appearance. It has a population of nearly 300,000, and its streets are lined with large and wonderful buildings. It has numerous hotels, at least three of which are superfine both as to appointment and comfort, as well as entertainment. It has the usual up-to-date street-car service, taxicabs, and bus lines, and is a very progressive and interesting city surrounded by attractive suburbs and with many stately mansions. The weather was all that could be desired, and during the meeting there was but one day of rain and the temperature got up to 90° at one time, but most of the time it was between 70° and 80°.

The entertainments for the visitors were many, both for men and women, and the people who owned large houses or estates made the visitors very welcome and entertained them royally. There were plenty of other places for entertainment, such as theaters, moving-picture shows, and art museums. What struck the visitor most was the large number of very high business buildings. One building is not less than twenty-six stories high. Many of them were majestic and imposing.

The business section is not confined to one street but covers three or more main streets and the streets leading through them. They have a new building called the Medical Arts Building, entirely for doctors and dentists, but it is not officially the home of the Dallas County Medical Society. It is built up to the third floor in a massive style, and from the third floor to the eighteenth floor is built in the form of a cross so that every room has outside light. This building is owned very largely by one physician; consequently, business, from the physician's point of view, must be good in Dallas.

The meeting of the Association was held at the Fair Grounds, and the large building where exhibits were found was probably the building where the state fair had its exhibit space. Jutting out from this and across the street in the Fine Arts Building were the rooms delivered over to Section meetings, and, as usual, from the main building there were compoboard additions put up to house the Sections, and from these there were more or less complaints because they were poorly constructed, inadequately lighted, and had no claim to acoustic properties. Consequently, the man with a feeble voice talked to the front row; the man with the large voice managed to penetrate down to the center of the house; and the man with microphone and amplifiers usually outdid himself, and the sounds were indistinct and sometimes confusing. However, the Section work went on very well as planned, and the Section rooms were assigned to one Section for a forenoon and delivered over to another Section in the afternoon, thus making it unnecessary for the visitor to sit throughout the entire day and listen to one chain of medical subjects. The exhibition room was filled with all sorts of things, from the office of the Association to books, instruments, and educational films and cards and the pathological specimens—the usual thing, but very well organized and very well displayed.

The registration is always very interesting, and at the time of the last issue of the *Bulletin*, which was distributed on Friday morning, the total registration for four days was approximately 4,200, and showing that Texas was really interested in the Association, for its registration alone was approximately 1,840. This gives one an idea of the enormity of the state of Texas. It was also shown that they drew equally attractive crowds from adjoining states; for instance, Oklahoma registered 432 and Louisiana a like number, so that most of the registrants came from the West, and you may divide the line as you see fit. Minnesota was represented by 61 regis-

trants, and of that number Rochester sent 24, Minneapolis 18, and Saint Paul 4, consequently only approximately 20 were registered from outside the three cities mentioned. North and South Dakota were not very well represented, unless, as it was found in some instances, a good many of the men did not register. So much for the attendance.

The installation of the new president, Dr. Wendell C. Phillips, of New York, took place on Tuesday evening before a crowd of 5,000 people. And on Thursday evening the presidential reception was held at both the Hotel Adolphus and the Baker Hotel. This was attended by the usual jam, making it difficult to get about or see one's friends. At the meeting of the House of Delegates on Thursday afternoon Dr. Jabez N. Jackson, of Kansas City, was chosen as president-elect, and he will take up his work next spring when the Association meets again. The vice-president was Dr. John O. McReynolds, of Dallas. The secretary, Dr. Olin West, of Chicago, was re-elected. Dr. Austin A. Hayden, of Chicago, was elected treasurer. Dr. Frederick C. Warnshuis, of Grand Rapids, Mich., who was re-elected speaker of the House of Delegates, has already presided for several years over this turbulent body. Dr. Allen H. Bunce, of Atlanta, Ga., was elected vice-speaker of the House of Delegates. The Board of Trustees: term expiring in 1931, Dr. Charles W. Richardson, of Washington, D.C.; term expiring in 1930, Dr. Joseph A. Pettit, of Portland, Ore.; term expiring in 1930, Dr. J. H. J. Upham, of Columbus, Ohio. To fill the unexpired term (1927) of Dr. Thomas McDavitt, deceased, Dr. Rock Sleyster, of Wauwatosa, Wis., was chosen.

One of the features which ought not to be passed unnoted was the barbecue tendered to the annual session at Fair Park by Dr. John H. Dean. This was expected to be a unique affair, but, unfortunately, the Dallas clouds poured rain in the streets and in the barbecue trenches all day long. However, the meats and other provisions were served just the same in the barbecue quarters and open pavilions of the Fair Grounds, and the crowd attended just the same.

A very delightful luncheon was given by Dr. J. O. McReynolds at the University Club. One had to go through the Sante Fe Building, take the elevator to the tenth floor, and there cross over a very modern "Bridge of Sighs" to an annex which houses, on that floor, the University Club of Dallas. About 400 plus were in attendance, so one can understand the magnitude of an undertaking of this sort. The luncheon was

given, really, in honor of the Mexican delegates, who came over from Mexico by special train to associate themselves with the American Medical Association. They were a fine-looking lot of men and one of them, who is at the head of one of the largest educational institutions in Mexico, responded in a very fraternal way to their reception and the entertainments which were given throughout their stay. Many toasts were responded to by prominent men, such as Dr. Hubert Work, of the Department of the Interior; Dr. J. O. McReynolds, who acted as toastmaster for his own luncheon; Dr. W. D. Haggard, President of the American Medical Association; Major Gen. M. W. Ireland, Surgeon General of the U. S. Army; Dr. George Waverly Briggs, Vice-President of the City National Bank, of Dallas; Col. J. T. Trezevant, a Confederate veteran and widely known Dallas business man, who told of his experiences in visiting Mexico City nearly thirty years ago; Dr. Wendell C. Phillips, and Mayor F. W. Wozencraft; Dr. A. C. Scott, of Temple, and Dr. A. C. Small, of Dallas. The guest of honor heading the Mexican delegation was Dr. Alphonso Pruneda, rector of the National University of Mexico, who was introduced as the head of the oldest school on the North American Continent. He expressed himself as overwhelmed by the hospitality and evidence of good-will which had been shown him and his party in Dallas; and Dr. W. J. Mayo, of Rochester, matched him by saying he had been in Mexico on two occasions and assured the guests that they would be received with a hospitality and courtesy that none of us know how to give.

One of the most interesting events of this luncheon, however, must be recorded because it affects the President of the Minnesota State Medical Association, Dr. Herman Johnson; the alternate delegate, Dr. W. L. Burnap, of Fergus Falls; and the editor of THE JOURNAL-LANCET. These three men were, unfortunately, a trifle late in reaching their seats, and at first, in their anxiety and haste to get proper places they nearly appropriated the seats intended for the distinguished guests. But someone gave them a friendly tip and they sought other seats. They spied some at the last table, but found it very difficult and almost impossible to get around the table; so, concealing all dignity and establishing a precedent, the rotund and smiling President of the State Medical Association and the athletic, energetic, and hustling Delegate, with the retiring bashful Editor of THE JOURNAL-LANCET crawled under the table to acquire their proper places. *Crawled* is the word that we want to use, and

anyone who witnessed the event would have been very much impressed with the efforts of these three representatives from Minnesota. Hereafter they are requested to attend more promptly when invited to an elaborate luncheon.

THE NEXT MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The House of Delegates decided after their final ballot to meet in Washington, D.C., and their argument was that as the Association had met in the southwest Washington was entitled to the meeting because of its accessibility and because it is a great city for the holding of conventions. The date has not been decided upon, but it will probably be sometime in May, as the weather is not hot in Washington during that month. There were other requests for the meeting; for instance Cincinnati extended an invitation, and has not had the meeting for twenty-six years. A third invitation was from St. Paul, and they had not had the meeting since 1901. But the vote was given to Washington by a very large majority. It is to be hoped that the men who have charge of the meeting, its time and place, will consider the man from the West and the Middle West, and see if some arrangement cannot be made so that several associations meet within a period of two or three weeks so that the journey home between meetings will be avoided and the expense, which is sometimes very great in going from one meeting to another; made less in this way.

It was thought, too, that there might be some change in the constitution or by-laws taking the power of selection of a meeting-place out of the hands of the House of Delegates and placing it in the hands of the Board of Trustees,—this on the ground that there were very few cities that could adequately entertain and house the Association. A city requires a large number of hotels so that three or four men will not be crowded into one room, as was necessary in Dallas, for the general comfort of the guests of the American Medical Association. Then, too, an important reason for this possible change is the selection of a city in which there is an auditorium that is adequate for the housing of members in their opening meetings and particularly for the housing of the sixteen Sections which form the Association. If this can be done under one roof, there will be no question about that city being a convenient and proper city for the meeting of the Association. This reduces the meeting-places down to a small number, and, although it is well for the Association to jaunt over the country occasionally to interest members in various locali-

ties, it is not infrequently a disjointed affair and not a representation from the United States. The men who traveled from Boston, New York, and Philadelphia to attend the meeting in Dallas were men who deserve to be classed as pioneers, just as the eastern men who go from the New York district to San Francisco when the meeting is held there; and this applies equally to the men in San Francisco who go to New York or Boston to attend the meeting of the Association. It is a long journey. It is not always an easy convention to attend. There is much serious work to be considered, and the most serious is that of the American Medical Association itself as to the details in carrying out convention methods that run smoothly only when properly directed.

Some cities avoid asking the American Medical Association to their borders because they feel that they are not adequately prepared. The various chambers of commerce are very anxious, of course, to get conventions to their respective cities, and yet most of them ought to know by this time that it takes a big town, a lot of big hotels, and convenient meeting halls to satisfy the members of the Association, as well as to make it easy for the financial end in the American Medical Association offices. If the new arrangement is made, that is, if the selection of time and place of meeting is left to the Board of Trustees, they will doubtless send out an investigator who will know exactly what he is running up against and who will be prepared to report definitely to the Board of Trustees. This may give rise to a little feeling, but in the end it is justifiable and wise. There are but few cities in a state that are prepared to entertain even their own state medical associations. Many of the smaller cities would like to, and feel they ought to, entertain their state society. But the question of comfort and satisfactory space is the one which will finally determine where the state society will meet. Fortunately, this year, the Minnesota State Medical Association meets in St. Paul, where there is ample space and ample hotel accommodation for a meeting of this size.

We expect to take up some of the Section meetings in our next issue, because the editor has something on his mind that he wants to dispose of—so kindly wait for the next issue.

A CORRECTION

Owing to the absence, on account of sickness of our proofreader who checks our page proofs, a wrong heading was put on Dr. E. M. Stansbury's article on page 178, and was overlooked. Dr. Stansbury's paper was on "Diathermy in Abdominal Injuries: Report of a Case." The error was in the title only.

NEWS ITEMS

Dr. W. T. Stone has moved from Nevis to Park Rapids.

Dr. C. N. Harris has moved from Nashauk to Chisholm.

Dr. O. J. Smith has moved from Yale, S. D., to Summit, S. D.

Dr. J. J. Ahlfs has moved from Bemidji, Minn., to Bismarck, N. D.

Dr. A. B. Hawes has moved from Bridgewater, S. D., to Butler, S. D.

Dr. Stella L. Wilkinson, of Duluth, has gone to Europe to do postgraduate work.

Dr. A. R. Colvin and wife, of St. Paul, have returned from their Mediterranean trip.

Dr. Henry A. Roust, who recently joined the Montevideo Clinic, has retired from the same.

Dr. F. M. Dryden, after practicing in Crookston for fifteen years, has moved to Pasadena, Calif.

Dr. H. L. D'Arms, who spent the winter in California, has returned and resumed his practice at Hector.

Dr. Andrew Christiansen, of St. Paul, was married last month to Miss Olive Hamburg, of Minneapolis.

Dr. C. N. Hensel, of St. Paul, has gone to Europe for special study, mainly in Vienna. He will return about Sept. 1.

Dr. Benjamin J. Martin, of Bemidji, who spent the winter in Miami, Florida, has returned and resumed his practice at Bemidji.

Dr. George W. Setzer, of St. Paul, has been appointed Assistant City and County physician of St. Paul and Ramsey County.

Dr. A. F. Groves, of Brainerd, has returned from Florida, where he spent the past four months and has resumed practice.

A notice of the Dallas meeting of the A. M. A. appears in our editorial columns, and further news on the same subject will appear in our next issue.

Dr. Archie D. McCannel, of Minot, N. D., received the honor of a unanimous vote at Grand Forks last month, making him governor of the Ninth District Rotarians.

Dr. W. H. Neumann, of Sheboygan, Wis., has returned from the East where he has been doing postgraduate nose and throat work under Dr. Mosher at Harvard and in New York City.

The following physicians received licenses to practice in Montana at the April examinations: Dr. Marne R. Warden, Warm Springs; Dr. Wilbur E. Thompson, Malta; and Dr. Eugene G. Free, Dillon.

Dr. John H. Crowe, of Virginia, died last month at the age of 58. Dr. Crowe graduated from Rush in the class of '01, and had practiced in Minnesota since his graduation, most of the time in Virginia.

The city and county health officers of North Dakota held their annual meeting at Bismarck this week. The program was composed of addresses, demonstrations, etc., all by North Dakota medical men.

Dr. A. E. Comstock, of St. Paul, has been chosen secretary of the Minnesota State Board of Medical Examiners to fill the vacancy caused by the death of Dr. Thomas McDavitt, secretary of the Board for many years.

Dr. and Mrs. R. A. Kelly, of Mitchell, S. D., have returned from a month's trip to Havana, Cuba, and various points in Florida. The doctor spent two and a half weeks attending clinics in New Orleans, en route.

The Northern Montana Medical Association, embracing the counties of Teton, Pondera, Liberty, Glacier, and Toole, was formed last month with Dr. P. O. Neraal, Cut Bank, president, and Dr. M. D. Riddle, Shelby, secretary-treasurer.

Last week a special drive was made in Minneapolis to educate the negro population in the matter of the spread of tuberculosis. A paper presented at the meetings by Dr. H. S. Bendes, of the Glen Lake Sanatorium, was broadcasted by WCCO.

The students in the Medical School of the University of Minnesota have established a council of eight students to deal with the subject of "cribbing" in the student body. The work of the council will be to maintain the honor code in the Medical School.

Dr. O. J. Mabey, of Iowa City, Ia., who has been associated with Dr. R. A. Kelly, of Mitchell, S. D., for the past year has entered a partnership with Dr. Kelly. The firm is known as Drs. Kelly & Mabey, and limit their practice to eye, ear, nose, throat, and bronchoscopy.

Dr. John L. Harris, of Watertown, S. D., died last month at the age of seventy-nine. Dr. Harris was a graduate of the General Medical College of Chicago in the class of '75, and located in Day County, S. D., in the early eighties, and was the first physician in the county.

The July issue of *Medical Life* will be a "Stomatology Number" devoted entirely to the "History of Stomatology" by Dr. A. J. Asgis, of New York. The issue will be profusely illustrated. There will also be a chapter by E. B. Hardisty on "Stomatologic Education in the United States in 1926."

Dr. Asher C. Taylor, of Duluth, died last month at the age of seventy-seven. Dr. Taylor graduated from the University of Michigan Medical School in the class of '74. He at once began practice in Manchester, Mich., and after seventeen years' practice there he moved to Duluth in 1890 and practiced there until the day of his death.

The Rush Alumni meeting to be held on May 19 at Aberdeen, promises to be the best of all Rush, South Dakota, meetings. Dr. Douglas Alway (Rush '24) will prepare a sumptuous feast, and Dr. Rollin T. Woodyatt ('02), Professor of Clinical Medicine at Rush, will tell all about the Old and the New Rush. No Rush fellow in South Dakota will be absent from the two feasts.

Dr. Charles G. Forbes, of Washburn, N. D., died last month at the age of sixty-three. Dr. Forbes was a graduate of the University of Michigan Medical School, class of '86, and was in practice in early pioneer days in North Dakota, but for the past thirty years had conducted a drug-store at Webster. He was active in the civic, fraternal, and religious activities of his city, and was a highly respected citizen.

The Dakota Clinic of Fargo, N. D., opened for the reception of patients in its new building at Seventh St. and First Ave. So. in that city on April 19. The Clinic is composed of the following physicians: Drs. Frank I. and Kent E. Darrow, Dr. R. E. Weible, Dr. Paul H. Burton, Dr. R. H. Rostel, Dr. W. H. Long, and Dr. Jacob Fjelde. The new building erected for the Clinic is a commodious one-story structure, tastefully furnished and equipped with all modern medical and surgical apparatus.

ANNUAL MEETING OF MEDICAL ASSOCIATION OF MONTANA

The State Medical Association of Montana will meet on July 16 and 17. In addition to the ten

papers by members there will be papers by Drs. W. J. Mayo, D. C. Balfour, and A. U. Desjardins, of Rochester, Dr. L. Webster Fox, of Philadelphia, Dr. R. C. Coffey, of Portland, Dr. Henry Schmitz, of Mercy Hospital, Chicago, Dr. Fred Adair and Dr. F. C. Rodda, of the University of Minnesota, Dr. A. D. Dunn, of Nebraska, and Dr. Morris Fishbein, editor of the *Journal of the A. M. A.*

In addition to the scientific program there has been made an effort to have the best commercial exhibit ever brought together at a western medical meeting.

The entertainment features will take care of themselves.

The Montana Health Association will hold its meetings this year in Billings on July 14 and 15, the Academy of E. E. N. and T. July 15, with clinics by L. Webster Fox, of Philadelphia, mostly on trachoma.

—E. G. BALSAM, M.D.
Secretary.

CASS COUNTY MINNESOTA MEDICAL SOCIETY, THURSDAY EVENING, MARCH 25, 1926

President Taintor in the chair. Reading and approval of minutes of previous meeting. A report of the meeting of the Medical Advisory Committee was read and unanimously approved. Routine announcements of the Society's activities were made.

There was a brief discussion of the question of "Medical Legislation," as referred to in the letters of Dr. Le Rose and Dr. Rindlaub (letters in file), and it was decided that at some early meeting all of the time should be devoted to the subject.

Scientific program consisted of three papers. First Dr. Lewis read a paper on "Some Practical Surgical Suggestions." Dr. Huntley read a paper on "Influenza, as seen by the General Practitioner," and Dr. Long read a paper on "Amebiasis." These papers were all freely discussed.

LESTER J. EVANS, M.D.
Secretary.

A TUBERCULOSIS INSTITUTE FOR NURSES

A tuberculosis institute for nurses will be conducted in Minneapolis again this summer, according to an announcement from the Hennepin County Tuberculosis Association. The dates this year are June 14-19, and the institute will be under the joint auspices of the General Extension Division of the University of Minnesota, the Hennepin County Tuberculosis Association, and Glen Lake Sanatorium.

The first institute of the kind was held at the University of Minnesota last June while the National Tuberculosis Association was in session in Minneapolis for its twenty-first annual meeting. The success of the institute last year was the inspiration for plans to make it an annual feature.

The program as outlined features bed-side care of tuberculous patients, and there are to be two days of the institute program given at Glen Lake Sanatorium where opportunity for inspection of equipment and a demonstration of the modern method of treatment and care of tuberculous patients will be of especial value.

One of the programs of the Institute will be given also at Lymanhurst Hospital for Children, and there

will be tuberculosis clinics at Minneapolis hospitals also.

Leading physicians and nurses in the tuberculosis field will be on the program. Dr. E. S. Mariette, Superintendent and Medical Director of Glen Lake Sanatorium, and Dr. J. A. Myers have been named a special sub-committee to invite a speaker of note to give the principal lectures of the course.

Miss Jean Taylor, Superintendent of the Visiting Nurses Association is chairman of the program committee, which includes in its membership Miss Helen Peck of the Infant Welfare Society; Mrs. Sue T. Naysmith and Miss Esther Andreason, of Glen Lake Sanatorium; Miss Mathilda Hallberg, of Thomas Hospital; Miss Elizabeth Sprague, of the Minneapolis Health Department, and Miss Minerva Dickey, Superintendent of the Tuberculosis Unit of Ancker Hospital, St. Paul.

Co-operation of the Child Hygiene Division of the State Board of Health will contribute to the success of the Institute, which is open to all graduate nurses, whether public health, institutional or private duty.

Miss Esther Andreason, assistant superintendent of nurses at Glen Lake Sanatorium is chairman of the entertainment committee and one of the special social features of the week will be a dinner to which all nurses in the Twin Cities will be invited.

Mrs. E. S. Mariette is chairman of the committee on arrangements for the institute. Registrations are to be made with Miss Eula B. Butzerin, director of the course in public health nursing at the University of Minnesota.

Bucky Diaphragm for Sale

Will sell an Engeln Bucky Diaphragm in first-class condition for \$150. Address 145, care of this office.

Minneapolis Office for Rent

On the best business corner on the East Side. Inquire of the East Side Pharmacy, 400 East Hennepin Ave.

Locum Tenens Wanted

For spring and summer in a Minnesota county-seat town. Salary and expenses. Address 152, care of this office.

Burdick Air-Cooled Quartz Lamps for Sale

At big sacrifice if taken at once. Used but little, has replaced tube, is as good as new. Communicate Victor X-Ray Corporation, Minneapolis, or 150, care of this office.

Specialists Wanted as Associates

An interne and an oculist and aurist are wanted to become associated with a Minneapolis Clinic. Address 153, care of this office.

X-Ray Apparatus for Sale

A "Snook" X-Ray apparatus for 220 volts, direct current, is offered for sale at a very reasonable price. Address 121, care of this office.

An Assistant Physician Wanted

In general practice in a good town near the Twin Cities; one whose inclination is toward internal medicine. Address 125, care of this office.

Matron and Head Nurse Wanted

By the Mudcura Sanitarium, Shakopee, Minn. (20 miles from the Twin Cities). Good hours and good wages to the right person. Address 148, care of this office.

Physicians Wanted in a Group

An eye, ear, nose, and throat specialist and an internalist can find fine offices at reasonable rent with a group in Fargo, N. D. Address 141, care of this office.

Good Office Location in Minneapolis Offered

A desirable location for a physician and a dentist is offered at Nicollet Ave. and Lake St. Reasonable rent. Telephone So. 6149, or address J. H. Light, 2939 Nicollet Ave.

Minneapolis Office for Rent

In down-town building, together with a group of physicians. X-ray and clinical laboratory facilities. Will greatly reduce rent to right party while building up practice. Address 154, care of this office.

Position Wanted

As an office nurse and assistant for a busy general practitioner or obstetrician. Can administer anesthetics. Minneapolis preferred, but will consider outside offers. Address 143, care of this office.

Experienced Laboratory Technician

Desires position in Twin Cities or vicinity. Capable of doing Blood Counts, Urinalysis, Wassermanns, Serology, Blood Chemistry, Gastric Analysis, Milk and Water Analysis, and Tissue Staining. Address 151, care of this office.

Fine Opening for Young Physician

A well-established physician in North Dakota desires a physician between 25 and 35 years of age to become an associate on a salary with a view to a permanent deal that will be eminently satisfactory to the younger man. Address 156, care of this office.

Practice for Sale

Large general practice in Eastern South Dakota to purchaser of office equipment and residence. Modern town of 700; fine territory; nearest competition 24 miles. Price less than invoice; cash or terms. A real location for a first-class man with a little capital and ability to work. Address 146, care of this office.

Fine Location and Fine Office in Minneapolis

There is a splendid location in a fast-growing section with no competition at 2300 West 50th St. Steam-heated modern offices at reasonable rent. End of the Oak and Harriet carline in fine new section of city. Inquire at above location or telephone Walnut 2413 (Christianson Drug Co.) or Hyland 3129 (owner of property.)

Practice for Sale

Will turn over good country practice and office equipment to purchaser of my modern 11-room house. Collections good, banked over \$6,500 last year. Town of 1,000; mixed farming and dairying community; 60 miles from Twin Cities; good roads, churches and school; competition light. Just the place for a German. Will arrange terms to right party. Address 147, care of this office.

THE JOURNAL-*THE* LANCET

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THE ETIOLOGY OF IRITIS AND ITS RELATIONSHIP TO CLINICAL DIAGNOSIS*

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The older text-books and writers all place the percentage of cases of iritis due to syphilis at about 50 per cent or more: Mauthner puts it between 60 and 75 per cent; Acosta, 52 per cent; Fernandez, 55 per cent; De Schweinitz, 30 to 50 per cent; Swanzy, more than 50 per cent, Fuchs only says "Syphilis is by far the most frequent cause of iritis." Duane, in his translation, says that various authors give from 30 to 70 per cent. The American Encyclopedia of Ophthalmology says "Syphilis is accountable for about 50 per cent of all cases of iritis." Butler, in 1911, says syphilis is the cause in 25 per cent of cases; that in 30 per cent it was impossible to determine the real cause and only 5 or 6 per cent were rheumatic. An analysis of 500 case records from Wills Eye Hospital reported by Jennings and Hill in 1909 gives syphilis as the etiological factor in 61.4 per cent; rheumatism, 25.4 per cent; gonorrhea, 5.2 per cent; and other causes, small percentages. Then we find Irons and Brown,¹ in 1916, publish a series of 100 carefully studied cases, about equally divided between private cases and those seen in clinics. This was supplemented in 1923 by 100 more cases of which the following is a graphic representation of the etiological factors found, alone or in combination:

INFECTIONS	Alone	With other infections	Total
Syphilis	12	26	38
Gonococcal infection	8	2	10
Tuberculosis	8		8
Dental infection	12	15	27
Tonsillar infection	26	27	53
Sinus infection	1	3	4
G. U. (non-venereal)	6		6
Other infections	3		3
No cause found	3		3
Undetermined	7		7
Combined infections	41		41

Wm. Lang² in some two hundred cases in private practice found syphilis responsible for only 6 per cent, gonorrhea 12 per cent, tuberculosis 11 per cent, general diseases 25.5 per cent, the striking part of his report being a percentage due to pyorrhea of 37. On the other hand, Clapp,³ of Baltimore, reports a series of one hundred consecutive cases of iritis in which syphilis is given as the cause in 82.4 per cent of 87 clinic patients and 69 per cent of 13 private patients.

The question naturally arises, "Why this great discrepancy in figures?" In the first place, I believe that many earlier observers empirically accepted syphilis as the cause in a great many cases, without proving that it was *the* cause. Our more modern knowledge of serology, the Was-

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sermann reaction, complement-fixation tests, etc.,—our better methods for the study of the tuberculous, our unquestioned advance in the study of focal infections, have all helped to determine more accurately the etiological factor or factors in iritis, as well as in other inflammatory conditions. Then, undoubtedly, race, locality, social status, and many other conditions have a large influence on the reports by different observers. As an example of this we might look for a moment at the figures given by Clapp. Of his 87 clinic cases reported, 69 (or 80 per cent) are negroes, so that I do not believe that we can accept his figures as at all representative. Zimmerman,⁴ in a paper on syphilitic iritis, answers for us by stating that he finds that iritis occurs in 1.76 per cent of white persons who have syphilis and in 12.9 per cent of syphilitic negroes. He gives as conclusions to his studies:

1. Both in early secondary and subsequently in the course of the disease (syphilis) the negro is more liable to iritis than the white man.

2. Iritis occurs in more than 10 per cent of all cases of early secondary syphilis in the negro, and is most often associated with follicular syphilides.

Roemer says that 3 to 4 per cent of all syphilitics develop iritis.

In considering the various etiological conditions concerned in iritis, we must admit that, while not responsible for as large a percentage of iritis as was formerly given, perhaps, syphilis is still one of the leading causes for the disease. It occurs sometimes during intra-uterine life, so that the child may be born with synechiæ, occlusion or seclusion of the pupil, or atrophy of the iris. Next we find it developing at any time after birth, though usually in childhood or youth, in congenital lues. It is then often associated with interstitial keratitis, but may occur alone. We may have development of gumma, even in congenital syphilis.

The largest group of cases due to syphilis occurs during the secondary or eruptive stage and have a great tendency to recur. This obviously makes this form appear almost exclusively in adults. In the typical form the diagnosis is not difficult. Occurring simultaneously with the skin eruption, or soon after, we have small papules, or condylomata, which develop in the iris either on the ciliary or the pupillary margins, but never between these areas (Fuchs). Santos Fernandez, however, describes five cases in a group of nineteen, in which the lesion appeared at neither the pupillary or the ciliary border of the iris but between them. They have a yellowish-red color

and are about the size of a pinhead or larger. In most cases these papules are multiple. Sometimes the nodules are not apparent, but there are several areas at the pupillary margin which appear swollen. Either with or without the nodules we usually find broad, firm synechiæ, which do not yield readily to atropine.

In a large group of cases due to syphilis, there is nothing peculiar to the condition which differentiates it from iritis due to many other causes. Here we have the serofibrinous and the plastic type, where our diagnosis must be made by thorough physical examination, and we can only be reasonably sure by blood tests, exclusion of all other possible causes, or by response to antisyphilitic therapeutics.

Finally we have a true gummatous iritis, which is found as a late manifestation. This type is usually monocular and the lesion single, appearing most often in the ciliary zone, and larger than the papules seen in secondary syphilis. The gumma develops rather rapidly, appearing two or three days after the first symptoms of iritis. Pain is often very severe, but may not be, as a large number of the cases are of the quiet type.

Tuberculous Iritis.—According to Parsons tuberculosis of the iris occurs in three distinct types: (1) miliary tubercles, (2) confluent or conglomerate tubercles, and (3) tuberculous iritis. The disease is seen most frequently in children and young adults, though we do find it later in life, and most often in both eyes. The first type is characterized by small, gray, transparent nodules in the iris, which keep changing slowly, some disappearing as new ones appear. The second type appears most often without the classical signs of iritis, as a solitary growth, which at one time was classed as a neoplasm. There is a steady growth in size until perforation takes place through the cornea, the mass breaks down, and ultimately we have only an atrophic stump left of the globe. An early differential diagnosis with the institution of appropriate treatment is the only possible way of saving these eyes.

The third type, which Parsons considers as the least common of the three, is clinically hardly differentiated from other of the more chronic forms of iritis. There is generally diffuse thickening and infiltration of the iris. In some cases necrosis with formation of a hypopion, developing into an organized exudate, aids in making a diagnosis. If the patient has a frank tuberculosis in some other part of the body, we have an aid in diagnosis. Because a patient has tuberculosis, on the other hand, it is not proof positive that an iritis is tuberculous. Tooke⁵ in a very excellent

and complete pathological study of four cases of tuberculosis of the iris calls attention to the involvement of the cornea in these cases, which he calls tuberculous iridokeratitis. In speaking of the differential diagnosis between syphilitic and tuberculous nodules, he does not believe that location of the nodules is very significant. He finds in two cases large nodules at the root of the iris, so that this in itself would not differentiate it from a gumma. He calls attention to the fact that in gumma the iris tissue itself is not as thickened as in tuberculous iritis. There is one other condition which enters into the differential diagnosis, iritis nodosa, which is due to caterpillar hairs gaining entrance to the iris through the cornea or sclera. In these cases there are also nodules in the conjunctiva in which the hairs can be demonstrated.

Rheumatic Iritis.—It has been suggested that this group be termed *autotoxemic iritis*. The older text-books and writers give the rheumatic group, as from 6 per cent to 25 per cent. For the most part, only those cases which had an arthritis or myositis, or a history of such inflammation, were classed under this head. If we consider in this class iritis due to focal infections, I think we shall find that a large percentage of all our cases comes in this group. Unquestionably many of the idiopathic iritides were due to undiscovered focal infections, and I am of the opinion that some which were classed as syphilitic were also due primarily to bacterial foci.

There is now no question that bacterial invasion of the tissues of the iris actually occurs. Rosenow⁶ injected animals intravenously with streptococci from rheumatism, from appendicitis, from gastric ulcer, from cholecystitis, from erythema nodosum, from herpes zoster, from parotitis, from pyorrhea, from tonsils, and from dairy products. There were forty-eight eye lesions produced in this way, and among them nine cases of iritis or iridocyclitis. Of these lesions, 17 per cent were from frank rheumatic cases, either arthritis or myositis; and 15 per cent were from herpes zoster. Rosenow has found in his work that there is a selective action of bacteria for certain tissues, under proper conditions. In culturing he has found that in order to produce experimentally lesions in tissues which correspond to those in the original host, organisms must be grown under conditions of oxygen tension to which they are accustomed.

Irons, Brown and Nadler⁷ produced iritis in rabbits by injecting, intravenously, streptococci isolated from a focus of infection in a patient suffering with iridocyclitis. Using streptococci

from a chronically infected tear-sac, they "produced iritis demonstrable clinically, by microscopic examination, and by culture" in three of four animals injected, and in two of four other animals injected with organisms isolated from the original source subsequently. Following this twenty-two rabbits were injected at weekly intervals without producing any eye lesions. One rabbit developed iritis from organisms recovered from one of the infected eyes.

Lewis,⁸ in 1919, injected a rabbit with streptococcus grown from a periapical infection in a patient with acute iritis. An iritis was produced in the animal, a section of the iris removed, and a culture of streptococcus viridans recovered from this tissue. As Lewis says, "This experiment proves absolutely for the first time, as far as I know, the selective affinity of the organism found in dental root abscess for the special structure which had been affected in the individual from which the tooth was taken."

Benedict⁹ reports a series of experiments undertaken with Rosenow and Meisser in which animals were injected with organisms from fourteen patients suffering from iritis. Of these patients five had acute (active) iritis, and nine had chronic (inactive) iritis or a low grade uveitis of more than four weeks' duration. Acute iritis was produced in rabbits by cultures from four of the five acute cases, but none in any of those from the chronic cases.

I quote from Benedict:

"The symptoms and course of the iritis in the rabbits ran about the same as in the patients. The first sign is hyperemia of the conjunctiva and sclera about the limbus. This is followed by injection of the vessels on the iris, swelling of the iris tissue, discoloration of the iris due to congestion, a slight contraction of the pupil and turbidity of the fluid of the anterior chamber. The pupil did not contract to more than half its diameter in any case.

"That the iritis was produced in animals by bacteria carried to the eye was amply demonstrated in these experiments. In one case the culture made from the iris of a rabbit was injected directly into the anterior chamber of the right eye of another rabbit. The following day, the same organisms, green-producing streptococci, were recovered from the uninoculated left eye. Fluid from the anterior chamber of this eye was then injected into the anterior chamber of the left eye of another rabbit. After ten days the rabbit was necropsied, and the organism recovered from the iris of the uninjected eye. The same organism was also recovered in cultures of

the blood of the heart, thus showing that the organism gained access to the blood stream of the injected eye and collected in the other eye. There were hemorrhagic lesions in other parts of the body which yielded pure cultures of green-producing streptococci."

The organisms most frequently found in cultures from dental abscesses and granulomata were green-producing streptococci (in short chains) and as diplococci, that is, streptococcus viridans, and staphylococci. The organisms recovered from the lesions produced in animals by inoculation of the mixed primary cultures were invariably streptococcus viridans and never staphylococci, showing that the former was the offending organism.

Fuchs said recently that he was of the opinion that some cases of iritis of this group were not caused by bacteria but by toxins. There is some question as to the rôle that toxins play, except as they are produced by bacterial foci. As we acquire more knowledge of focal infections, this group of cases of iritis is constantly enlarging, while especially the idiopathic, and to a lesser degree some of the other groups, are becoming smaller.

Clinical observation on this group of iritides is certainly not wanting. Lang's work, Irons and Brown's much quoted series, Benedict, Lewis, Dunn,¹⁰ Harrison,¹¹ Billings,¹² Wood, Stroub, Lemoine, Verhoeff, and an endless list of observers all show the relationship clinically of focal infections to eye diseases in general and iritis in particular. In our experience dental infection is probably the chief source of organisms which produce iritis; not far behind seems to be the infected tonsil. To a lesser degree we have accessory nasal sinus disease, suppurating ears, gastro-intestinal infection, non-venereal genito-urinary infection, and of the female pelvic organs, appendicitis, etc. Some of these produce what we term "rheumatism" and some do not. Rosenow says there is a closer connection between iritis and rheumatism than between iritis and other bacterial disease. It seems strange that rheumatic iritis should be questioned by some ophthalmologists. Harman, in 1911, says it is strange how rarely we see iritis in subjects of acute rheumatic fever; and never an iritis during its progress or convalescence, notwithstanding the frequency of inflammations of other serous membranes. It is true that most cases are in persons with more or less chronic arthritis, but surely iritis does occur in acute febrile rheumatism. Billings says that "a primary focus or foci of infection is located usually in tissues com-

municating with cutaneous or mucous surfaces." We know that reduced resistance and heightened susceptibility in the tissues or increased virulence of the exciting organism may set up inflammation.

It would not be far-fetched, therefore, to imagine that iritis occurring in a large class of general diseases might also be due to focal infections. Where such foci are present the reduced resistance of the host may allow the infectious organism to produce an iritis. I think, in this connection, of some of the cases ascribed to disorders of metabolism, hypothyroidism, menstrual disturbances, and even diabetes. Surely, it must be true in traumatic iritis in which there has been no break in the surface continuity to allow entrance of infection from without.

This type of iritis is acute in onset for the most part, severe in character, usually confined to one eye, and very apt to recur if the causative agent is not removed.

Gonorrheal Iritis.—There are probably more cases of gonorrheal iritis than the older authors have said. Fuchs says that many of the recurrent cases of iritis are due to an old focus of gonococci somewhere in the patient. It does not seem improbable that some of the recurrent cases, whose cause has been ascribed to syphilis, are really due to Neisserian infection, where there has been infection with both. It is quite sure, also, that many cases that have been classified as rheumatic are also due to an old gonococcal infection. Browning¹³ in a study of iritis due to gonococcus infection gives the following points as aids in making a diagnosis:

1. Genital history of gonorrhea some years previously.
2. Specific reaction to gonorrheal vaccines.
3. Association with gonorrheal rheumatism, though not invariably.
4. Recurrences after prostatic or urethral massage.
5. Negative evidences of other infections, etc.

He does not consider that the complement fixation test is consistently reliable enough to base conclusions on. Irons and most others feel that it is very reliable.

Browning says that he has never seen a case in which the iritis developed during an acute urethritis. In most cases it develops during a general invasion of the system, by gonococci, evidenced by joint symptoms, seen in the so-called gonorrheal gout or rheumatism. The knee-joint seems to be the site of predilection for the deposit of the organism and is often the first joint involved. The iris apparently fulfills the cultural

requirements in some cases, though, compared with the large number of cases of gonorrhea, the percentage with this complication is certainly low. In regard to sex, gonorrheal iritis is much more frequent in men than in women, and is more easily proven in men.

There is a type of case not mentioned by Browning except incidentally, his cases being of the more chronic type, in which there have been several attacks of iritis or arthritis. In the first clinical variety, the attack often includes both eyes, in the early stages of gonorrhea, with no other symptoms of a general systemic invasion, while in the second we more often see one eye at a time involved, and a history of rheumatism in the joints is given. The onset is usually very acute and severe, with exudation, the pupils sometimes being occluded by a plastic mass. As a rule the permanent changes are remarkably slight when compared with the severe inflammation manifested.

Iritis in acute infectious diseases.—There have been case reports of iritis occurring with nearly all the acute infectious diseases and many general diseases,—pneumonia, complicated by otitis media and lateral sinusitis (Patterson, Colorado, Oph. Soc., February 15, 1913), Influenza (Reber, Oph. Record, November, 1915), Dysentery (Luna,¹⁴) and (Marwell and Kiep,¹⁵) typhoid, pertussis, variola, mumps, relapsing fever, etc. Sometimes included under this head are peliosis rheumatica, purpura hemorrhagica, and erythema exudativum multiforme, which most probably belong to the rheumatic group, with the possible exception of purpura hemorrhagica, which is probably not a disease entity.

All the cases in the metabolic group and in acute infectious diseases differ in no respect from the cases seen in focal infections, some of a mild type and some very severe.

Under special headings which may be etiologically considered as entities, we may mention diabetic iritis, which is said to occur in about 5 per cent of diabetics. "Galezowski met it seven times in one hundred and forty-four diabetic patients with ocular disease. Leber saw it nine times in thirty-nine diabetics," a very high percentage. Clinically this type varies from a very "quiet" form with no exudation, to a severe plastic and sometimes purulent one, in which great damage is done. Another is gouty iritis, very closely resembling rheumatic iritis, "especially in the severity of the pain, the frequent relapses,

and the spongy exudation." A special form of iritis seen in gouty individuals is guttate iritis. There is no severe iritis but the formation of drop-like, almost translucent excrescences on the pupillary margin of the iris. We may find, in spite of the absence of inflammatory symptoms, adhesions between the iris and lens, which yield readily to atropine. There is a marked tendency to recurrence of the condition. Iritis is very commonly found among lepers, and is very similar in type to that found in tuberculosis. We have not considered iritis due to exogenous infection, seen in injuries, operations, etc., nor that seen in sympathetic ophthalmia, which I will only mention.

SUMMARY

1. Iritis, especially in this locality, is caused much less frequently by syphilis than is ordinarily stated.
2. Focal infections, especially of dental or tonsillar origin, play a large part in the etiology of iritis.
3. The more common acute forms of iritis are due to focal infections, gonorrhea, syphilis; the more chronic, to syphilis and tuberculosis.

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(For discussion of this paper see page 135.)

MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART I Continued

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III. THE TUBERCLE BACILLUS

Tuberculosis is one of the greatest enemies of mankind. To examine the chest by the stethoscope and by the *x*-ray is only an attempt to locate the enemy. Most patients come to the physician because they believe he can cure or help them to control their tuberculosis; therefore to fight this enemy of humanity one must know more than the fact that it produces râles in the chest and shadows on the *x*-ray plates. Indeed, one should become as familiar as possible with some of the more common characteristics of the organism causing the disease,—the tubercle bacillus.

Staining qualities.—Every true tuberculous lesion is caused by the tubercle bacillus; therefore if one seeks patiently and persistently enough the bacilli may be recovered from all tuberculous lesions. Whether they be in sputum from a tuberculous lung, in urine from a tuberculous kidney, or in excreta and pus from any other tuberculous lesion, they possess that peculiar staining quality which has caused them to be classed with the acid-fast microorganisms. Numerous staining methods have been devised to differentiate and make the tubercle bacillus visible to the human eye. No other method is in more general use and is more satisfactory at the present time than the Ziehl-Neelsen method with the Kühne modification briefly described as follows: The suspected material, sputum, for example, is placed in a thin smear on a glass slide. The smear is allowed to dry, after which it is well covered with carbol-fuchsin. Then heat from a bunsen burner is applied until the fluid steams. This process is continued from three to five minutes after which the excess stain is removed by rinsing the slide in cold water. Then a 2 per cent solution of aniline chlorhydrate in water is applied to the smear for thirty seconds. The slide is then placed in 25 per cent alcohol until it is well decolorized, that is, no red stain is appreciable to the naked eye. The slide is then rinsed in water and Kühne's blue is applied for twenty seconds. This consists of the following:

Methylene blue.....	1.5
Absolute alcohol.....	10.0
Phenol solution, 5 per cent.....	100.0

The slide is then thoroughly washed in water and dried, after which it is ready to be studied with the microscope equipped with an oil-immersion lens. During the process of staining the carbol-fuchsin penetrates the tubercle bacilli, but, because of their chemical constituents, the solution of aniline chlorhydrate is unable in the allotted time to decolorize the red dye in the bacilli although all other red dye is removed from the slide. Kühne's blue then gives a blue coloration to the other parts of the smear. Thus the tubercle bacilli appear red on a blue background.

Morphology.—When viewed with a microscope the tubercle bacilli appear as slender rods measuring about 0.3 micron in thickness and 1.5 to 3.5 microns in length. These red-stained rods, each surrounded by a waxy capsule, usually appear straight; however, some may be slightly curved and one occasionally sees those which appear beaded. Careful study has shown that the transparent parts often observed in the bacilli are not spores but are due to lipid-like substances which have been designated Gram-positive granules of Much. Artificially grown bacilli may vary considerably in their morphology, depending upon the chemical composition of the media upon which they are grown. Under such conditions some are seen to be much longer than usual, and even branching and club-shaped enlargements may be observed at their extremities. Deviations from the usual may depend also upon whether the bacilli are taken from an active or a healed lesion or whether they are taken from a recent process or one of long standing.

Proliferation.—Proliferation is not due to the process of sporulation, as was believed at one time, but rather to the process of elongation and transverse division.

Growth in nature.—It has been shown that tubercle bacilli multiply in nature only in the bodies of human beings and certain of the lower animals. It is obvious, therefore, that every case of tuberculosis develops from a preceding one. To be sure, tubercle bacilli are found in many other places, but they have always been deposited there, directly or indirectly, by people or animals. They do not proliferate in nature except in the animal body. This is a fact of great significance from the standpoint of prevention.

Growth on artificial media.—Much has been added to our knowledge of the tubercle bacillus since man has learned to grow it on artificial culture media. Not long after the discovery of the tubercle bacillus, Koch was able to grow tubercle bacilli on beef and mutton serum when the temperature was kept at 37° C. About 1887, after it was known that tubercle bacilli could be grown on certain sera, broths, and agar, it was learned that when these media contained a 5 to 8 per cent glycerine content the bacilli grew much more luxuriantly. Since that time many improvements have been made on methods of cultivating tubercle bacilli artificially. Media are now in use which contain potato; veal or beef peptone broth; serum from cattle, swine, and horses, egg, small pieces of animal tissue, such as liver and spleen from cattle, bile, etc. To most of these glycerine and the proper minerals, such as sodium chloride, calcium sulphate, magnesium, potassium, etc., are added. In all the culture media tubercle bacilli thrive best at a temperature approximating that of the animal in which they grow best. It is upon the growth of tubercle bacilli upon artificial media that the production of tuberculin depends, and in this growth much is learned concerning the chemistry and other secrets of the bacillus.

Destruction of the tubercle bacillus.—Heat has been found to be very effective in destroying tubercle bacilli. In the presence of moisture a temperature of 95° C. destroys life of culture suspension in one minute. Lower temperatures over longer periods of time have the same effect, for example, ten minutes at 70° C. or one hour 60° C. or twelve hours at 50° C. will destroy the bacilli. In certain products, such as milk, a longer time is necessary because the albumin protects the bacilli. The pasteurization of milk has proved to be a most practical application of the destruction of tubercle bacilli by heat. In this process Forster insists that it is necessary to maintain the temperature of the milk at 70° C. for not less than thirty minutes in order to insure destruction of all the bacilli.

When dry heat is applied at a temperature of 100° C., forty-five minutes suffices to kill all tubercle bacilli.

Cold temperatures, even to that of liquid air (minus 180° C.), for many days have not been sufficient to destroy either the life or the virulence of tubercle bacilli.

Drying.—In drying bacilli, containing material, such as sputum, the effects upon the bacilli depend upon the amount of light, etc. For example, dried smears on glass and cloth kept in

a dark cool place have yielded live bacilli two to four months later. In the presence of diffuse light the bacilli remain virulent about forty days. Bacilli on the pages of books, on clothing or in well-lighted rooms usually do not live longer than ten days.

Light.—Light is one of man's greatest protective agents. It has been shown that cultures of tubercle bacilli succumb when exposed to the sun in summer for a period of two hours, whereas in smears on glass slides ten minutes of direct sunlight destroys them. On clothing an exposure to daylight twenty-four to thirty hours is required to remove the danger of infection. Probably this effect of light is due largely to the ultraviolet rays since it has been shown that on exposure to the mercury vapor quartz lamp which emits a preponderance of ultraviolet rays all bacilli are killed in ten minutes.

Ozone.—Ozone in dry air to a considerable concentration also kills tubercle bacilli in a few minutes.

Chemical agents.—Among the numerous chemical agents used to destroy tubercle bacilli, none has been found more effective than carbolic acid, a 5 per cent solution of which kills them in one-half minute. Absolute alcohol kills in five minutes, while with corrosive sublimate ten minutes is necessary.

Types of tubercle bacilli.—At the present time we recognize three distinct types of tubercle bacilli and a possible fourth type. These are human, bovine and avian types, and the acid-fast bacillus of cold-blooded animals.

The human type is responsible for nearly all of the pulmonary tuberculosis in man. It may and frequently does produce lesions also in other organs of the human body. This type is capable also of producing disease in lower animals, such as guinea-pigs, rabbits, and cattle.

The bovine type of bacillus is the chief cause of tuberculosis among cattle and swine. Besides producing disease in many other animals the bovine type also is responsible for some of the tuberculosis in the human family. This is particularly true before the fifth year of life, when from about 6 to 10 per cent of all fatal cases are due to the bovine type of bacillus.

The actual relationship existing between the human and bovine types no one knows. It is fairly generally believed, however, that originally they belonged to the same strain, but that through centuries of adaptation to living in the bodies of different animal organisms each developed certain biological characteristics. There is fair evidence that either type could be converted into

the other type if carried through a sufficiently long period of existence in the bodies of animals in which it has not been accustomed to inhabit. For example, Calmette calls attention to the fact that bacilli isolated from the knee joint of a man of thirty-eight years inoculated into a calf produced only slight local lesions. From these lesions in the calf another calf was inoculated and only local lesions appeared. From this second calf a third was inoculated. This time in addition to the local lesions which were more extensive there appeared nodules in the lungs, spleen and liver. A fourth calf inoculated from the third developed fatal tuberculosis.

Although these experiments sound quite convincing, the problem of transforming one type into another has not been solved. While tuberculous cattle are capable of infecting man they are more dangerous to animals of their own kind. We see also that in certain countries where cattle are free from tuberculosis that the human family is badly infected and diseased. Then the disease spreads from one man to another, and the bovine type of bacillus plays no part.

Under the microscope the human and bovine types appear identical. That each has certain biological characteristics, however, has been proved by certain cultural and inoculation methods. For example, Park is of the opinion that a luxuriant growth on glycerinated egg at the first sowing always indicates the human type, while a failure to grow on glycerinated egg or a good growth on non-glycerinated egg indicates the bovine type.

Calmette and Guérin have called attention to the fact that the human type grows on potato cooked in 4 per cent glycerine ox bile very sluggishly, whereas, if human bile is substituted for ox bile, a luxuriant growth ensues. The opposite holds true for bacilli of the bovine type.

Experimental inoculation also has been found of great value in differentiating between the human and bovine types of bacilli. It has been shown that rabbits receiving by way of the marginal ear vein 1 mgm. of human bacilli do not die within sixty days, and autopsy shows only non-progressive lesions in the lungs or kidneys. On the other hand, 0.01 mgm. of bovine bacilli injected in the same way causes the death of most of the animals before the sixtieth day. Those not dead by that time show extensive tuberculosis.

Another differential method consists of inoculating one millionth of a mgm. of suspension of pure culture into the anterior chamber of the rabbit's eye. If the bacilli belong to the human

type a mild non-progressive tuberculosis develops which soon shows a tendency to heal, but if the bacilli belong to the bovine type the eye is soon destroyed, and generalized tuberculosis develops.

It has been shown also that the white mouse resists the bovine type much better than the human type, while the opposite is true with the rat.

Calmette and Guérin have found the lactating goat an excellent animal to use in differentiating between human and bovine types of bacilli. With a fine milking tube they introduce, without causing a wound, deeply into one of the teats a suspension consisting of 1 or 2 mgms. of culture. Human bacilli cause a rather intense local infection, which after several months tends to disappear, but reappears with the next period of lactation. On the other hand, bovine bacilli also produce an infection, but it soon spreads to the pelvic lymph nodes and later involves the lungs and thoracic nodes producing death in four or five months.

The avian type.—This type of tubercle bacillus produces tuberculosis in fowls, always those domesticated or in captivity. Those most commonly affected are the English sparrow, the barnyard hen, the turkey, the pea fowl, the parrot, the canary, the pigeon, and the guinea fowl. It occurs also in such birds as the eagle, the ostrich, and the crow. This type of tubercle bacillus has been isolated from tuberculous lesions in mammals, including man. Under the microscope the avian type of tubercle bacillus has no characteristics which differentiate it from the human and bovine types. However, it has certain characteristics. For example, it grows at a temperature as high as 43°C, and as low as 28°C. In the lower temperatures its growth is more sluggish. However, this is a point of differentiation since the human and bovine types refuse to grow below 36°C. Inoculation also proves helpful in differentiating this from the other types. If one suspects a tuberculous lesion as having been caused by the avian type, inoculation of the bacilli into the guinea-pig will produce little or no effect, whereas if the pigeon or common barnyard fowl is used progressive tuberculosis will develop.

Thus the human, the bovine, and the avian types of tubercle bacilli are very important to the student and practitioner of medicine, inasmuch as all are capable of producing tuberculosis in man as well as in his domestic animals. While the dangers from avian tuberculosis are not great, this type must be considered a possibility in dealing with tuberculous infection, and disease.

The acid-fast bacilli of cold-blooded animals

have been found in fishes, frogs, lizards, turtles, snakes, and many other cold-blooded animals. They have been grouped into the piscine type and the reptilian type. As yet no one has been able to demonstrate that these bacilli are virulent for warm-blooded animals. Moreover the passage of human, bovine, or avian types through the bodies of cold-blooded animals has as yet produced no change in their characteristics.

Paratubercle bacilli have been found to be very common in nature. They appear in dusts, water, and soil, on the skin and mucous membranes of animals and men in the healthy state. Most of these are harmless, yet they are acid-fast bacilli, which have very much the same appearance under the microscope as true tubercle bacilli. The most common paratubercle bacilli are those found in the sweat glands of the feet; those found upon the nasal membranes; and those found in comedones. None of these have been found to produce disease in the animal body. Likewise the paratubercle bacilli found in butter, milk, sewage, soil, and excreta from normal persons and animals are not pathogenic. On the other hand, the bacillus of leprosy, the bacillus of rat leprosy, and the bacillus of bovine enteritis are definitely pathogenic forms.

The non-pathogenic forms have in the past caused serious errors in diagnosis. I recall a general biologist who became interested in the tubercle bacillus, but apparently did not know about paratubercle bacilli, inasmuch as he regarded every acid-fast bacillus observed as a true tubercle bacillus. Indeed, not much was known about them at that time. Some normal students and assistants submitted to him specimens of urine for examination. In nearly all he reported the presence of tubercle bacilli and diagnosed renal tuberculosis. The tragic part of it all was that he advised patients, one by one, to flee to a mountainous country. For a number of years they roamed the mountains of the West and Southwest of our country only to be told by clinicians at a later time that no evidence of tuberculosis could be found in their bodies. Undoubtedly, in many of these cases the smegma bacillus was mistaken for the true tubercle bacillus. Therefore, it becomes necessary at times to differentiate between paratubercle and true tubercle bacilli. It has been pointed out that in an occasional case a diagnosis of tuberculosis is made upon the presence of acid-fast bacilli in the sputum with no confirmatory findings. In such cases careful differentiation should always be made. It has been shown that if such sputum is added to ordinary broth and is kept at 30°C. true tu-

bercle bacilli usually will not multiply, while paratubercle bacilli will multiply abundantly. If any question remains one should resort to animal inoculation.

Geographic distribution of the tubercle bacillus.—Just where the tubercle bacillus first appeared and which animal organism was its host no one knows. We believe, however, that most of the tuberculosis in the world is traceable to man. We see tuberculosis first flourishing in the civilized and densely populated countries, such as Europe, where to-day we find the greatest numbers affected with this disease. From the old and long-civilized countries we find tuberculosis spreading to lands where it had never before existed. Very striking cases have been cited to show how definitely it has followed the courses of immigration from the old countries. On first thought one might hold that most patients with clinical tuberculosis are too ill to have much interest in immigration. This is not true, because many seek change of climate, but even if it were true recent advances in our knowledge of tuberculosis have proved that this still would be a method of spreading the disease. For example, it has been shown that persons who have recovered from tuberculosis and have been restored to normal living for years are capable of being carriers of tubercle bacilli just as truly as others may be carriers of diphtheria and typhoid fever. Such tuberculosis carriers with full working capacities with no symptoms of the disease are capable of eliminating large numbers of tubercle bacilli from their bodies. It has been demonstrated also in cattle that animals appearing perfectly healthy cast from their bodies through the excreta huge numbers of virulent tubercle bacilli.

Thus unknowingly many emigrants from the long-civilized countries have transmitted tuberculosis until to-day this disease has spread to the natives of most parts of the world. As one might expect, however, tuberculosis is more prevalent in certain parts of the world, such as Europe where we find the incidence of infection very high. Hungary, Greece, Roumania, Austria, Sweden, Ireland, Norway, Switzerland, and France among the European nations have the highest mortality, though Scotland, Spain, Germany, Denmark, Italy, Holland, England, Wales, Belgium, and Portugal have their full share of this disease. In all these countries the mortality from tuberculosis is lower in the rural districts and small towns than in the cities.

From the standpoint of tuberculous infection, Calmette found 88 per cent of persons above fifteen years of age had been infected with tuber-

culosis. In Vienna it has been shown that more than ninety per cent of adults have been infected. Similar figures have been reported for many of the large European cities. Indeed Calmette says: "In the urban centers of Europe and among the rural populations which have frequent relations with them, at least nine-tenths of the individuals reaching adult age have not succeeded in escaping tuberculous contamination."

Because of its ancient civilization resulting in crowded living conditions, one might expect tuberculosis to be very prevalent in Asia. Indeed, the Asiatic countries are second only to the European countries in tuberculosis infection and mortality. Tuberculosis is common in Japan, Indo-China, Sumatra, Siam, and Java. In Manila, in the Philippine Islands, it causes more than 11 per cent of all deaths. In some of the larger Chinese cities it is the most common cause of death among the poor people. Although no statistics are available for the whole of China, several observers have reported it to be very common, appearing in all of its forms and stages. It is stated that prior to 1905 tuberculosis was not very common in Persia; however, since that time with increased European immigration it has become much more prevalent.

Among the natives of Indo-China tuberculosis is a well-known disease, whereas among those of Cochinchina it is quite rare, probably because European immigration has been slight, so that the disease has existed there only since the Chinese invasion.

In Oceanica the scene changes somewhat in that we see less tuberculosis than in Europe or Asia. However, in Australia probably because of much European immigration since the middle of the nineteenth century the disease has been spreading very rapidly among the natives, as well as among those of New Zealand and Tasmania. In some of the island groups, such as the Malay and Polynesia, tuberculosis is rare except where European and Asiatic trading and immigration are becoming extensive.

The Africans probably have been subjected to more servitude than the natives of any other part of the world in recent times. Along with this servitude tuberculosis has wrought havoc with the African. He began a terrible combat with this disease when the Europeans and the Arabs entered his country as traders and conquerors. In Africa tuberculosis has a very unequal geographic distribution. For example, in many of its coast cities and towns the mortality from this disease is high, while as one passes into the interior little visited by foreigners, tuberculosis becomes

less and less prevalent as the frequency of foreign visits decreases until natives are found among whom little or no tuberculosis exists.

We now come to the American continent entirely free from tuberculosis before the days of European immigration and colonization. To-day tuberculosis is a wide-spread disease on this continent. In many parts of South and Central America it decimates the population and in Mexico causes about 6 to 8 per cent of all deaths. In the United States the number of deaths from it now annually approximates 100,000. In Canada the death rate is considerably lower than in the United States likely because of fewer negroes. The death rate is about 87 per 100,000 population per year.

While tuberculosis is a common disease on the American continent, the incidence of infection is lower than that of the older civilized countries.

Since European immigration began, the American Indian has suffered terrific losses from tuberculosis, and at the present time this disease more than anything else threatens to annihilate his race.

Geographic distribution of tuberculosis in animals.—Of all animals cattle are most frequently attacked by tuberculosis. In countries where these animals are stabled during several months of the year the disease is especially prevalent, while in countries where stabling is unnecessary, such as the western plains of the United States or the grazing districts of South America, tuberculosis does not exist except when introduced by animals imported for breeding purposes. This is also true of Africa, Japan, and a few other parts of the world. In many countries, such as France, Germany, England, Italy, Denmark, Norway, and Mexico, the incidence of tuberculosis among cattle ranges from 25 to 50 per cent. It is most prevalent among milch cows of the age of six years or more. In the United States the incidence of tuberculosis among cattle is somewhat lower than in many European countries. However, here it is sufficiently prevalent to constitute a tremendous problem.

In swine tuberculosis is more common than was formerly believed. It may be due to the human, the avian, or the bovine type of bacillus. In Argentine bovine tuberculosis is quite rare; nevertheless there is considerable tuberculosis among the swine. There it is believed its origin is from feeding swine carcasses of tuberculous fowls or refuse from homes where human tuberculosis exists. In most places, however, swine tuberculosis may be traced to cattle, particularly where the swine feed upon the undigested grains

passed by the cattle or are fed the unpasteurized milk from tuberculous cows. The control of swine tuberculosis is not difficult since they are usually killed at so young an age as to prevent their tuberculous lesions becoming broken down and so becoming a serious menace to others of their kind. Moreover, when isolated from cattle and fed upon pasteurized milk and other foods free from live tubercle bacilli, swine herds may be kept free from tuberculosis.

The sheep and the goat contract tuberculosis very rarely, and usually when living with cattle. However, there is a sufficiently high incidence of tuberculosis among these animals to render their food products so dangerous as to require inspection.

Tuberculosis in the horse and in the ass is very infrequent. However, cases are on record showing that these animals may become diseased from the bovine, human, or avian types of tubercle bacilli.

In dogs and cats tuberculosis occurs rather frequently. It is quite common in dogs living around public eating places. It is estimated that about 1 per cent of cats living in large cities have tuberculous lesions. Inasmuch as the human and bovine types of bacilli are capable of producing tuberculosis in these animals, it is obvious that they, in turn, may transmit tuberculosis to man. This fact physicians should constantly bring before the public where such animals are allowed to come into intimate contact with children and even adults.

Among the wild animals of the world tuberculosis has never been known to develop except when they are placed in captivity. The same is true of birds with the exception of the English sparrow, pigeon, etc. However, domesticated fowls, such as the barnyard hen; and birds in captivity as pets, such as the parrot and canary, may be a real source of danger even to man.

STENOSIS OF THE ESOPHAGUS*

By HORATIO B. SWEETSER, JR., M.D.

MINNEAPOLIS, MINNESOTA

A little over a year ago a man brought his son of two and one-half years to us, unable to eat and unable to swallow anything more difficult than fluids and very thin gruels, and for the past few days regurgitating even water. The boy was extremely thin, quite dehydrated, and almost on the edge of a catastrophe. Two and a half months before this he had drunk some lye that had been left about the house. Of course he had an esophageal stenosis, and presented the old problem of treatment. The first choice is between surgery of any type, on the one hand, and dilatation, on the other.

Dilatation of stricture of the esophagus is one of the oldest procedures of medicine. Very early efforts were made with willow wands; later came whalebone and other flexible bougies of graduated sizes. A further refinement was made by using olive-shaped bulbs on the end of the bougie. All this time the only guide was the sense of feel of the operator, and it was inevitable that the mortality was very high because of perforation of the wall of the esophagus.

In the nineties a Boston surgeon, Mixter, if I remember rightly, introduced the use of a thread as a guide. It was not, however, until Plummer, of Rochester, popularized it that the

thread was widely used. This was a tremendous advance, as may be seen in Figs. 1 and 2. Keen's

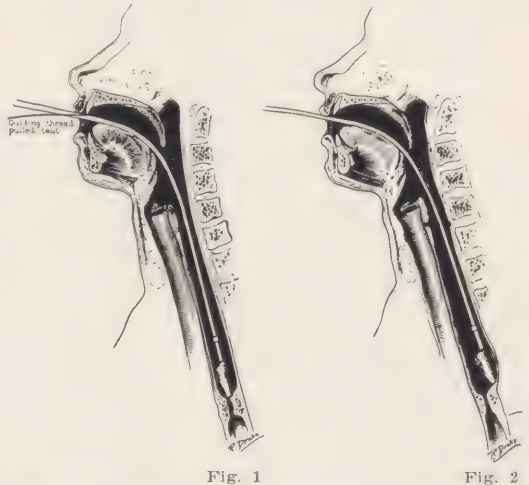


Fig. 1

Fig. 2

Fig. 1.—Method of measuring distance of stricture from incisor teeth with blunt olive. This type of olive is not used for dilating.

Fig. 2.—Hazard of passing olive without a guiding thread. Perforation is almost certain to occur if pressure is used.

Vinson and Moersch: Jour. of the A. M. A., 84:659.

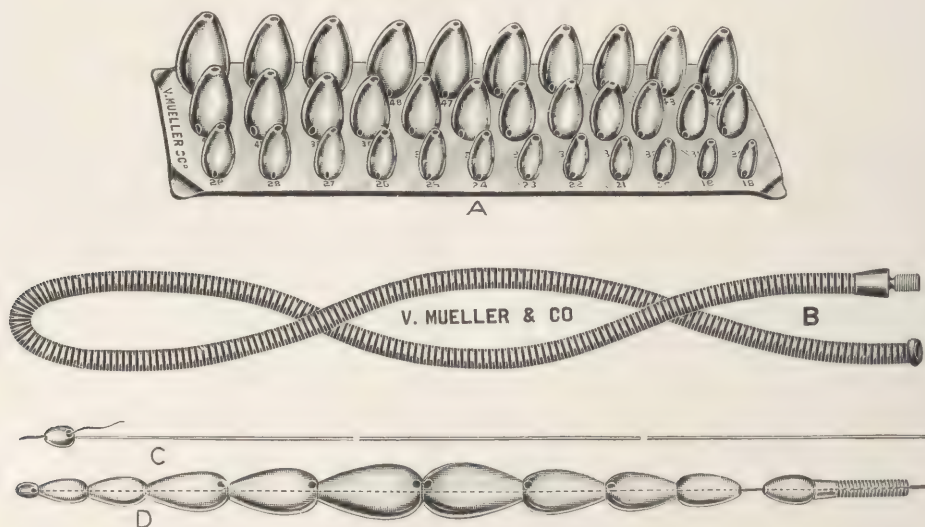
Surgery gives directions about the way to move the tip of the dilating bougie and stresses the importance of never using force in dilating because of the danger of perforation. "If the esophagus is dilated long enough, the patient will eventually die of the bougie." With the thread as a guide, force may be used to a certain extent, but the

*Presented before the Hennepin County Medical Society, January 13, 1926.

thread may break and will not keep the dilating bulb in the line of the lumen in a tortuous stricture.

There has been another feature, added to the string by Sippy about the same time or a little before Plummer began using his dilator. This dilat-

small, the second larger, and the third the dilating bulb, just a little larger than the stricture. Two or three more are strung on the wire facing the other way so that there will be a gradual increase in size coming out as well as going in. Behind the last bulb the spiral wire pusher is



ing outfit consists of a number of cone-shaped or olive-shaped bulbs varying in size from 18 to 51 F. (A). For children and for very tight strictures it is well to have still smaller bulbs down to 8 or 10 F. or even smaller. These bulbs have a perforation through their long diameter. Then there is a spiral wire "pusher." (B). Finally there is a long piano wire guide, (C), tapered at one end to increase its flexibility. On the end of this tapered end is screwed and soldered a very small bulb, perforated so that it will slide over the thread. The thread used is Corticelli silk twist, size D, E, or F. It is swallowed, either as a free end, or a foot or so is wadded up in a capsule and so swallowed. As it is swallowed small quantities of fluid are taken. If too much is taken into the esophagus at once it is overloaded and its contents, including the thread, are regurgitated. However, with patience, a thread may be made to pass through a stricture that will allow even only small quantities of fluid to pass. Our patient of two and a half years swallowed three yards in the first twenty-four hours.

After the string reaches the stomach, the normal peristaltic action carries it down the intestine, and when a few feet are engaged in the intestine it is usually well enough anchored. This may be determined by pulling on it. Several bulbs are strung on this wire guide, the first quite

also strung on the wire guide. (D). Now the piano wire guide is threaded on the thread and gently passed along it into the stomach. The string is such a good guide and the wire is so flexible that no harm is done even though it goes clear around to the pylorus. After the wire guide is passed through the stricture the dilating bulbs are pushed down along it. With a little practice you can feel the type of tissue you are dilating, whether it is soft and friable, or whether it is dense tough connective tissue, and the amount of force necessary can so be regulated. With this method one may be perfectly sure that the only force applied is in a lateral direction, and that there is no danger of a perforation from making a false passage. With a stricture of tough connective tissue a high degree of force can safely be used.

We were able to dilate this boy's esophagus from a little less than size 18 F. to about 24 F. which was about as large a bulb as would go into his esophagus at all. During his stay of about two weeks at St. Mary's he gained five pounds and changed from a sick, emaciated, dehydrated appearance to one of relatively good health.

It is necessary to dilate lye strictures and other benign strictures at first quite frequently, later once every few months, to keep the opening clear. One boy we had while I was in Chicago had been coming in for some six years at vary-

ing intervals for dilatations. He was about twelve then, and no doubt the esophagus is still being dilated.



Fig. 3.—Esophageal stricture two and one-half months after swallowing lye.

Some discussion as to the relative merits of surgery and dilatations is worth while. First there are the desperate cases which come with an impermeable stricture, and in which a delay of even a few days will be fatal. Gastrostomy in these cases carries a high mortality, but must be done immediately to save the patient's life. It is in these patients that surgery with a view to reconstructing an esophagus is justified. Any esophagus is better than being fed through a gastrostomy tube for a number of years. Many types of operation have been devised, but only a very very few have been successful. Rovsing, of Copenhagen, has two successful cases with new esophagi made of a tube of skin from the front of the thorax. Other attempts have been made with transplanted fascia lata, with jejunum, with ileum, with colon, with sections of the stomach wall, etc., with practically universal failure. There are, however, relatively few who wait so long that gastrostomy is necessary. The others can almost always swallow water. Being able to swallow fluids, they practically all can

swallow a thread, and once having that down the esophagus can be dilated.

The other frequent type of esophageal stenosis is carcinoma of the esophagus. The esophagus stands fifth among the organs in point of frequency of carcinoma. In these the ideal would undoubtedly be resection of the whole esophagus with the growth and later the reconstruction of a new esophagus. Franz Torek, of New York, has one case living from 1913, when the operation was done, to 1925, when she died of pneumonia. Lilienthal reported a successful one in 1922, and Eggers, using Torek's technic, operated in one case successfully in March, 1924. Willy Meyer, in June, 1924, said that these three are the only radical cures of carcinoma in the world. I have found no more reported since then. Practically, then, this leaves a choice between radiation therapy and surgery, and dilatation. X-ray and radium were hailed enthusiastically at first, but the results have not been nearly as good as the expectations. Paper by C. W. Hanford, June 9 and 10, 1924, "Cures are very rare. Improvement follows treatment in a small per cent of cases. This improvement is not of long duration as a rule." Aside from radical resection, the only surgery that may be done is palliative, that is, surgery that will supply food to the patient, and that means gastrostomy. When a patient has a gastrostomy he must have it the rest of his life. It is necessary for him to have a nurse, a relative, or a friend to care for it; he is unable to eat with the rest of society, and he must have specially prepared food. If this operation is done late, it has a definite mortality of its own; if it is done early to lower the mortality the patient has all these disadvantages and discomforts to contend with. Then there is the added factor that even though the patient and his family have been told that the operation will not "cure" him, still they hope that it will, and may rather resent the fact that he dies just the same.

Now, this same method of dilatation may be used with carcinomas and with the same advantages as in cicatricial strictures. The patient will die just the same, it is true, but the esophagus can be kept open so that he will not die of starvation. There is much more danger of splitting the esophagus with cancer than with scar tissue, and if enough cases are dilated there will be disasters in the hands of any man. However, these are reduced to a minimum by careful handling of this method. One of the patients I dilated while on Dr. Sippy's service got along perfectly well for about two months and then returned com-

plaining of cough. A swallow of barium was seen under the fluoroscope to spread out in the bronchial tree on both sides. The carcinoma had ulcerated through into the trachea, and of course he died in seven or eight days. He refused a gastrostomy at that time. Other patients with carcinomatous strictures may go along for many months in comparative comfort and be able to work with only an occasional dilatation, finally to die of metastasis.

There is one other agency that is of value in treating these cases, and that is the esophagoscope. Its value in diagnosis is very great, but it is only the exceptional stricture that can be dilated through it. In those cases, however, it may remove the necessity for surgery.

SUMMARY

1. The most common stenosis in childhood and youth (cicatricial stricture following swallowing of a caustic) is best treated by dilatation over a thread and a wire guide.

2. The most common stenosis in patients over thirty is due to carcinoma. The ideal treatment is radical resection and reconstruction of the esophagus. The most efficient and successful palliative treatment is the same sort of dilatation, that is, over a thread with a wire guide.

3. Surgery, except radical resection, is rarely indicated, and then rather as an emergency measure.

4. The results of radium and x-ray have been disappointing.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of March 10, 1926

The Minnesota Academy of Medicine held its regular monthly meeting at the Town and Country Club on Wednesday evening, March 10, 1926, at 8 P. M. Dinner was served at 7 P. M. There were 39 members and 3 visitors present.

The meeting was called to order by Dr. A. S. Hamilton in the absence of the president and vice-president.

The minutes of the February meeting were read and approved.

Dr. H. A. H. Bouman (Minneapolis) reported two cases as follows:

CASE 1.—Two very large "loose bodies" of the knee joint. A farmer, 62 years old, was referred because he had attacks of sudden stiffness of his right knee during the past two years. His rheumatism was growing worse, and the knee felt insecure and was larger than the other knee.

There was nothing in the family history of any import. He had always been well except at the age of 21, when he still lived in Sweden, he had been seized more or less suddenly with severe pain in the upper five inches of his right tibia. The pain had been of such a character that he could never forget it. After two weeks of suffering, a doctor had been called and had him removed to a hospital, where his leg had been opened. He remained at the hospital for six months. The wound drained continuously, pieces of bone coming out at different times. After he got home the condition continued for another three months, when the wound closed. He has been free from trouble up to two years ago.

Present status: The man is in good health. His right knee is large, containing several large sized bodies in the anterior pouches. These were removed under local anesthesia at St. Andrew's Hospital.

The points of interest are the large size of these bodies and their structure. Growing from the nu-

trient substances contained in the synovia, they clearly show the outer fibrocartilage layer and the calcified inner one, surrounding a hollow space.

CASE 2.—Grawitz tumor of the left kidney. (Specimens and slides were shown.) This woman was seen first on January 15, 1924. Her family history was good. She was 49 years old, married, in good health previously, had four children, and was still menstruating normally. At the end of November, 1923, she was in an automobile accident when the car ran into a ditch. Since then she had had severe pain at menstruation. The hips had been sore before, but now the left one had become very painful, especially in the morning. The condition continuing, she entered the Northwestern Hospital, Minneapolis, for diagnosis.

She proved negative on examination, except that the uterus was too large, and the left upper horn was exquisitely tender. There was cystocele. The Wassermann was negative. Cystoscopy revealed normal urine from both sides, separately obtained. A pyelogram was not made.

After several consultations she was operated on. A small fibroma was removed from the left uterine ostium. A heavy band of adhesion, passing from the sigmoid to the right round ligament and bladder, was removed. There was evidence of extensive old peritonitis about the sigmoid; no diverticula. Ventrofixation was performed, and the perineum repaired.

She was apparently well and free from pain at menstrual periods and otherwise until February 11, 1926, when she had rather severe pain in the left side of the abdomen along the ureter, but without intestinal symptoms, bladder disturbance, or fever. There was little relief, and she entered St. Andrew's Hospital, February 13, 1926. X-ray films were taken, and showed the right kidney normal, the left kidney pelvis seven inches long and distorted, extending far outward under the 11th rib. The urine, taken separately from the ureters, was twice negative.

The bowel outline was normal. Her appetite was fair, and she was negative generally, except for the persistent and severe abdominal pain which was distinctly left-sided, and a large irregular tumor, inelastic, tender at its middle, situated under the left costal border and protruding slightly, could be felt along the vertebral column. This did not move with respiration and seemed fixed.

The probable diagnosis was hypernephroma, in spite of the fact that there was no hematuria.

Operation consisted of exposure by the lumbar route, with rib resection. The very large tumor was firmly adherent and was dislodged from the diaphragmatic fossa with great difficulty. Following a division with the finger, this tumor was clamped. The ureter was identified and properly cared for. The vessels at the outer and upper corner of a sausage-like remaining mass were separated and doubly tied. There was a great deal of a yellowish, very greasy matter oozing from cyst-like pockets. We emptied several such pockets with smooth walls, attempting, with due caution, to remove as much as possible. The rounded rest tumor was about four inches long and two inches thick and was fixed along the vertebræ, the beating aorta passing in its mesial border. There was no bleeding.

About this time the anesthetist gave a warning. We had come to a tube-like pocket, and the finger entered a smooth tube passing across the beating aorta and the vertebral body. While the structure was held, the assistant passed a catheter, which disappeared easily. A very large clot followed its withdrawal and a flow of dark blood. The vein was immediately well secured and sewn carefully. There was astonishingly little blood. The vessel was an inch wide. The catheter passed across the vertebra to the right side and then down, with perplexing ease.

The patient recovered rather promptly from what appeared to be a hopeless condition, and is doing well at the present time. Radium will be applied in a few days.

Hematuria is absent in 25 per cent of these cases. The relief from pain following the first operation may have been a natural remission. There was an absence of appreciable metastases.

DISCUSSION

DR. A. SCHWYZER: I remember just one case where we damaged a very large vein in this neighborhood. It was a case of carcinoma of the transverse colon. The case was almost inoperable, but still seemed more or less movable though the carcinoma had grown toward the root of the mesocolon. The mesentery was quite fleshy there, and we put on a clamp and cut above the clamp. The clamp slipped a little and in a moment there was a flooding with blood. We of course compressed at once, but in that short space of time there was about ten ounces of blood lost. We had cut away a slice of the superior mesenteric vein. It was sewed laterally with fine running silk. The case terminated successfully. It showed the fierceness of the bleeding when we get into the large veins of the abdomen. That was in the big part of the superior mesenteric vein. Those veins bleed from both sides and the bleeding is much worse than from a good sized artery which has firmer walls and can therefore

be handled more energetically without fear of further tearing.

These hypernephromata seem to have the quality of growing at times into the veins. This is also true of malignancy in another organ, and that is malignant goiter. In different forms of adenocarcinoma of the thyroid, the tumor is liable to grow into a vein and you are liable to feel the thick cord of a vein where the neoplasm has entered.

Dr. M. S. Henderson (Rochester) read a paper entitled "Ununited Fractures of the Neck of the Femur." Lantern slides were shown.

DISCUSSION

DR. COLE: This study of Dr. Henderson's is very interesting and illustrates one thing which I believe Dr. Henderson touched upon but did not emphasize. There seems to be no doubt that the number of ununited fractures of the neck of the femur is decreasing throughout the country, and undoubtedly this is due to the more general use of the Whitman abduction method in the acute cases. The one other point which I think was brought out by the statistics is that the mortality in the unoperated cases and in the operated cases is about the same. There are, therefore, undoubtedly certain acute cases where operative measures are indicated in order to hurry union and make sure of good position. The choice of operation, such as whether live bone or beef bone pegs should be used, is probably unimportant.

DR. CHATTERTON: I wish to emphasize only the diagnosis. The cause of many admittedly poor results is due to the fact that a true diagnosis has not been made and, if made, only meager treatment instituted. The time element was not sufficiently considered. It requires at least four months without weight-bearing to secure union, and six months in the greater number of cases, while many cases of ununited fractures give the history of only two months' treatment. Complications demanding frequent change of position in the patient are often the cause of non-union. Poor results with good treatment, because of poor physical condition of the patient, are not infrequent.

Another cause of ununited fracture is the fact that no real treatment was instituted, especially in old people where the diagnosis was not made.

Dr. Bradford brought out the idea that the presence of synovia between the fragments of bone was the frequent cause of non-union.

Dr. Smiley Blanton (Minneapolis) read a paper entitled "Some New Applications of the Principles of Psychological Medicine."

DISCUSSION

DR. W. A. JONES: It is very difficult to add to what Dr. Blanton has already said except that one may have some very strong convictions that we believe and act as we do because we are inherently built that way. I am persuaded, too, that environment has a good deal to do with our behavior, but, compared with heredity, it has less. A great many children grow up mischievous, perhaps over-zealous and over-active, but when the opportunity presents itself they suddenly emerge into a full-grown adult or even into young manhood and perform as a human

being should perform. I presume it is due to something in them that has not been brought out until a special crisis in their lives has been reached or some special environment has been presented. It is sometimes almost impossible to analyze the family satisfactorily, and the first analysis, of course, should be of the parents and grandparents before we can determine very much about the future of the child.

Dr. Blanton has cited an extreme case of behavior, not only of the children but of the family, and, undoubtedly, if this family had been separated, much improvement might have taken place in the children, or if the family occupied a different atmosphere their relationships might be entirely different.

I still think that the old-fashioned way of bringing up some children is much more satisfactory than the new way. A good sound spanking occasionally, with the proper explanation of why it is done, is a great deal better than psycho-analyzing the child, its behavior, and its surroundings. Of, course, with defective children this takes on another aspect because they are primarily physiologically, anatomically, or chemically bad and they have to be cared for as any young small animal is looked after.

I have a woman under my observation who is now about thirty-five years old and who seemed like a mild, inoffensive, pleasant sort of person. She married a man twelve years ago and has had two children by him. She said the night she married this man she hated him and had hated him ever afterwards. This was her starting point, and both of them evidently had started wrong; he was the aggressor, and she was the innocent. She is a typical neuropsychiatric person, full of emotions, frequently uncontrollable, and easily tired out. Every spring she has had a period of three or four months in which she was partially incapacitated. Yet her two children are smart, bright, and physically well. Will they grow into something equally promising or will they develop some of their mother's tendencies later in their young adult life? Sometimes the unexpected turns in life will bring out all the fine resources that they possess, and on the other hand we know so little about what heredity and environment will do that the question is a very difficult one to solve as to behavior.

It is presumed that most of the men here have read books on heredity and environment and are familiar with the book written by Dr. Dorsey, an anthropologist of Chicago, entitled "Why We Behave Like Human Beings." This book is not as satisfactory as many others because it is fragmentary and condemnatory in that he believes that most of the other books written in the past few years are utterly useless, and he has frankly stated that most of them are "bunk." But it seems to me that his own book is just as unsatisfactory as he claims the others are. He is also rather discouraging in his outlook as to the future of the individual; but, believing as we do now in the individual and his own inherent characteristics and his environment, whether satisfactory or unsatisfactory, he is little likely to change from what he is predestined to do. I confess that I am very skeptical about the future of the race myself. I may be more or less stubborn in the matter, but it seems to me that 90 to 95 per cent of us—and I claim to be of that percentage—are more or less feeble-minded—that includes its widest meaning, from the lowest to the

highest. How are we going to improve the mental status?

DR. SCHLUTZ: The subject Dr. Branton has discussed is an important one in pediatrics. Those who have been in active practice certainly realize that. The greatest difficulty I have always found was not so much the control of any factor of disability or defect due to actual disease, but, rather, the correction and control of environmental and social factors. We had no good mechanism to analyze or successfully treat behavior and child-guidance problems. The most successful result was generally obtained if the child was entirely separated from its immediate environment, and this was generally done in difficult cases. Amazing results can be accomplished by the type of analysis and therapy described by Dr. Blanton.

I agree with Dr. Jones that a whipping is often a good thing, but it must be intelligently applied. I had a stern father who would give me a good licking with a sapling I had to cut myself, and would then demand that I thank him for it. I know now, of course, that he meant well, but I recall the anger and indignation I experienced when he made this demand.

Dr. Jones' outlook for the human race as regards mental capacities is rather pessimistic and is, I hope, not quite true. I agree heartily with Dr. Blanton in his estimation of Freud and his theories.

DR. CHRISTISON: This has been intensely interesting to me. However, I cannot altogether agree with our pessimistic friend. I never had a whipping at home, and during all my school career I had but one teacher who ever undertook to whip me, and she tried it only once.

When one undertakes a study of the psychology of childhood, the first thing to do is to put oneself in the other fellow's place. I am connected with the Children's Division of the United Charities in St. Paul, and a large part of our work is the placement of children, taking them out of bad homes and putting them into "foster homes," where we have a general supervision of them. Many of these cases come to us from the courts. When one looks into their home conditions they are sometimes so deplorable that one often wonders why the child is not worse. Many of these children are amenable to reason. If you are kind to them and they are properly fed and told to do the thing that is right because it is the proper thing for them to do, and not because they fear punishment, you get along very well with them.

If we could appreciate what the mind of a child really is and how it acts and what the child thinks about the action of its parents and elders, we might get considerable enlightenment.

I have come to the conclusion that the majority of children are like their mothers: you can lead them anywhere you want to, but you cannot drive them an inch.

DR. HERBERT JONES: It seems to me this subject is more important than the interest it gets would indicate. From Dr. Blanton's paper, dealing with the various phases, you can see what the study of behavior in children leads to. It takes us into almost every field—home, school, business, and religion. This work is so new the nomenclature has not been fully worked out. It seems to me that the

world is in a rather peculiar psychological state just now as evidenced by the popular fads and fancies.

However, I think the children in the Northwest were never taken care of so well physically as they have been in the last twenty-five years or since the advent of Dr. Sedgwick. If you will look back at the way children were taken care of twenty-five years ago you can see there is a big improvement at the present time. I recall that in the early textbooks it was taught that one of the stigmata of nervous degeneration was the high-arched palate. A lot of nervous neurotic people were of that type. The orthodontists now correct that condition in childhood, and you do not have nervous people from that cause. If we can do as much for the psychological condition in the next twenty-five years it will be a wonderful improvement, and the outlook for this was never so good as it is at present.

DR. BLANTON (in closing): Dr. Sweetser asks about the Mendelian law. I can perhaps best answer his question by quoting the following passage from Dr. Jennings who is one of the leading biologists in America to-day. He says (from "Heredity and Environment" by H. S. Jennings):

"Not only what the cell within the body shall become, but what the organism as a whole shall become, is determined, not alone by the hereditary materials it contains, but also by the conditions under which those materials operate. Under diverse conditions the same set of genes will produce very diverse results. It is not true that a given set of genes must produce just one set of characters and no other. It is not true that because an individual inherits the basis for a set of characteristics that he must have those characteristics. In other words, it is not necessary to have a certain characteristic merely because one inherits it. It is not true that what an organism shall become is determined, fore-ordained, when he gets his supply of chemicals or genes in the germ cell, as the popular writers on eugenics would have us believe. The same set of genes may produce many different results, depending on the conditions under which it operates. True it is that there are limits to this; that from one set of genes under a given environment may come a result that no environment can produce from another set. But this is a matter of limitation, not of fixed and final determination; it leaves open many alternative paths. Every individual has many sets of 'innate' or 'hereditary' characters; the conditions under which he develops determine which set he shall bring forth. So in man, the characteristics of an educated, cultured person are as much his inherited characteristics as are any that he has. "Beyond all other organisms, man is characterized by the possession of many sets of inherited characteristics; the decision as to which shall be produced depending on the environment. The axolotl may be compared to an uneducated man, the amblystoma to an educated one. The educated man has characteristics very diverse from those he would possess if uneducated. We say, when we think of this fact, that these are acquired characters, environmental characters, due to education. This is correct; but there is

a tendency to go farther and say that these are not inherited characters, which is a mistake. The characteristics of the educated man are his native inherited characters, just as truly as are any that he has. For all his characteristics depend on the conditions under which he develops, and would be diverse under different conditions, just as it is true of the characteristics that develop under education. And the characters developed under education depend upon the hereditary materials derived from his parents, changing as these materials are altered, just as do all others. 'Hereditary' has no consistent meaning other than this."

The general opinion among biologists at present seems to be that among human beings nothing else is inherited according to the Mendelian law except eye color and hair color. Of course, we do inherit physical characteristics from our parents, but the law of this inheritance is not quite clear.

One of the members of the Society just asked, "What is normal?" and "What is right and wrong?" Our idea of what is normal and what is right and wrong is constantly changing. In general, the psychiatrist takes the prevailing standards, the social concept of the community he is in, in deciding what is right and wrong. Things that we thought were abnormal some time ago we now recognize as within the limits of normality. At one time masturbation was considered to be very abnormal, but we have since found that practically all children masturbate at one time or another, so this practice cannot be so very abnormal.

Dr. Jones seems to feel that much of the work of the psychiatrist with children is useless because children outgrow behavior difficulties. This is true. Children also outgrow many of their physical defects. But there is always a large enough percentage who do not outgrow their physical defects so that we feel that it is unwise to allow physical defects to remain untreated. Most children will outgrow rickets, but we take every precaution that we can to see that they do not develop rickets. We may say the same thing about behavior difficulties. Children may outgrow them, but a certain percentage do not outgrow their behavior difficulties. They grow up with rickety minds, timid, fearful, moody, inhibited, unsuccessful people.

The laws of discipline are not easy to formulate. The first thing that we must do is to study man with the same scientific detachment that we do the other facts of life. From this study, we are led to the conclusion that the behavior of people is symptomatic of some underlying cause. It is only when we are able to find out the cause that we are able to modify behavior. We must think of behavior in the same way that we think of physical symptoms. If a child has a pain, we try to find out the cause of it. If he has a temper tantrum, we must not treat the temper tantrum; we must try to find out the cause.

In disciplining children, we have three methods before us. We can give them acute physical pain, acute psychological pain, or prolonged psychological pain. This is the negative side. On the positive side, we can reward them.

JOHN E. HYNES, M.D.
Secretary.

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DEAN LYON'S BROADCASTING STATION

The regular monthly meeting of the Hennepin County Medical Society took place at the Elks' Club on May third with approximately 275 members and visitors present. The dining-room was crowded, everyone seemed to enjoy the dinner, and at the head of the table sat the visiting men: Dr. Herman M. Johnson, President of the Minnesota State Medical Association; Dr. W. F. Braasch, Vice-President of the State Association; Dr. E. A. Meyerding, the Secretary; Dr. W. L. Burnap, the Ex-President; and Dr. J. T. Christison, who is a member of the Editing and Publishing Committee of *Minnesota Medicine*, as well as the all-around legislative advisor. The meeting was conducted in the usual way; that is, the usual business session was held, the minutes of the last meeting were read, and finally the report of the Executive Committee of the Society was read, and the following resolution which was adopted, will explain itself:

"WHEREAS, a radio speech, a copy of which is herewith incorporated, was broadcast on February 5, 1926, by the Dean of the Medical School of the University of Minnesota, through Station WCCO, therefore, *Be It Resolved*, that the Hennepin County Medical Society is opposed to the type of propaganda and policies broadcast in the above-mentioned radio speech.

"Be It Further Resolved, that the Hennepin County Medical Society is absolutely opposed to the general policy of admitting patients who can pay to the University Hospital or other public institutions which are supported by taxation.

"Be It Further Resolved, that the Hennepin County Medical Society does hereby express its willingness to co-operate with the Board of Regents of the State University of Minnesota and others in authority to the end that an abundance of suitable clinical material, secured entirely from the ranks of the worthy poor, may be available for medical instruction, and pledge our support in securing public and private funds for this purpose; and

"Be It Further Resolved, that a copy of these resolutions be spread upon the minutes of this Society, copies be sent to the President of the University of Minnesota, to the President of the Board of Regents, and to the Dean of the Medical School of the University, and that the Delegates of this Society to the Minnesota State Medical Association be and hereby are instructed to present this resolution to the attention of that organization at its next meeting."

There was a great deal of discussion from all angles, and some of the men felt that the resolutions were not sweeping or drastic enough to suit them, but as the author of the resolutions, Dr. J. D. Lyon (not the Dean, but a member of the Committee) accepted the resolutions of the Executive Committee they were finally adopted, unanimously, apparently. It seemed to be the consensus of opinion among the members present that Dean Lyon had overstepped the mark. He is recognized as an honest, conscientious, and willing worker, but he lacks in judgment, comprehension, and vision. The result is that he gets off speeches and articles without consulting any of his confreres, and the outcome is not infrequently bad; consequently he is looked upon as incompetent for his job, and it is the opinion of many of the men, not only in the cities but in the country, that it is time the University looked for another Dean. Last year, sometime in 1925, the Dean wrote a paper which was published in the *Journal of the A. M. A.* on "Socialism in Medicine," which not only aroused criticism but much ire; and then when he broadcast this last speech he upset the entire state, that is, the medical side of it, and he certainly did the public no good except to confuse them. As an outcome there have been a statewide discussion of the subject and a great deal of feeling against the Dean for his methods, and naturally against the Medical School. Some inquiry has been made

as to the personnel of the faculty, and why they have not courage enough to get up and speak their minds, but it has been quite generally understood in the profession that they do not dare to; they are afraid either of the powers that be or of losing their University affiliations. At all events they have been singularly remiss in not standing up for the rights of the faculty and for the medical men throughout the state.

One objection to the present Dean is that his viewpoint is that of a research man, a physiologist, as he is and a good one. He has no doctor's viewpoint. He does not look at things as medical men do because he has had no experience and he cannot be expected under the circumstances to look on things medical with the proper point of view. At any rate, the meeting showed the feeling of the medical profession throughout the state, and the subject will doubtless be taken up at the State Medical Association meeting and handled without gloves.

There was an Advisory Board (since abolished) in the faculty who presumably are fitted to advise with the Dean or the Regents as to what should be done for the benefit of the School. But arguments do not last long with Dean Lyon. He always has an excuse, he always has a promise to do better or to do something different, and the result is that he was able, because of his association with the full-time men, to carry a one-vote majority in the Advisory Board. The public press has been filled with the story, and it has been more than broadcast, not only by the Dean but by the newspapers, and evidently it has aroused a good deal of contention, and what will be done time alone will show.

Socialism in medicine does not seem to be much favored in Minnesota, neither is too much vocal exercise, which interferes with the politics of institutions and brings into contention the various affiliated societies. However, many of the points that were discussed at the evening meeting were presented first by Dr. W. F. Braasch, who is a Councillor and Vice-President of the State Association. He spoke particularly of his early affiliation with the Hennepin County Medical Society and his continued interest therein and also of the advisability of having the Society conducted in a businesslike manner and the further necessity of increasing the fees for membership.

Dr. E. A. Meyerding, the Secretary, also discussed the business end of the organization and urged closer co-operation and harmony among the members of the Association and of the affiliated societies. Dr. Meyerding evidently has a large amount of work to do, and it is no more

than right that he should be well compensated for his untiring efforts.

Dr. W. L. Burnap, the ex-President, talked about his trip to Dallas, his experience in the House of Delegates, and the necessity of getting together as it were, and fixing on an object and attaining it; that he was very much impressed with the work of the House of Delegates at the American Medical Association, and that he had acquired considerable knowledge as to its activities.

Dr. J. T. Christison expressed himself in his very happy way, and showed his oratorical powers by praising the Hennepin County Medical Society, as did all the other men, and also telling of his experience with Dr. Herman Johnson in the legislative work of one and a half years ago. He referred to himself as "we," but he said: "That means nothing; it means simply that the President told me what to do, and I did it." He further said that he was not in any way responsible for the improvement in the State organization, that the credit was due entirely to Dr. Johnson.

Dr. Johnson was the last speaker, and he went over a very carefully thought-out résumé of what had been done, what should be done, and how the State organization could, if it would, become a powerful body and could sell itself to the public if it attended strictly to its own affairs, improved its condition by educational methods and by proper business methods, and also by dealing with the public fairly and squarely and telling them what it meant to become a medical man and how much it cost him. His estimate of the medical graduate was, considering his schooling, his years spent in the hospital, and his start in medicine, approximately twenty thousand dollars. He afterwards put that figure up to something that equaled a fifty-thousand-dollar investment. He thought it was well worth while to consider that angle, and he gradually led up to the proposition that to run a business like the State Medical Association money is required. And he thought most of the members ought to be willing to pay at least a hundred dollars a year. Then he cut it in two and made it fifty, and came down to twenty-five. Ultimately he agreed that for the present fifteen dollars a year would about cover the actual maintenance of the State Association. His object in urging the higher fee was to create a fund; that the State Association ought to have at least \$150,000.00 in its treasury so that it could enlarge its scope, increase its influence, and bring the people and the medical profession into a better understanding. Dr. Johnson told of his ex-

perience in going about the state with some of the other members of the Committee and how when things were explained to an organization or society they understood much better and were willing in every way to aid the efforts of the State Medical Association. He said, too, that the state organization should not do business on the basis of the "Ladies Aid Society;" that is, it ought to be a powerful instrument for good for the people. His arguments were better placed, more accurately stated, and covered the ground more fully than in any of his previous efforts. Perhaps, like others, he was inspired by the large attendance and the encouragement he had received from the activity and the willingness of the members of the Hennepin County Society to assist in the development of a great society. Since this meeting it has been learned that Ramsey County has taken a similar stand, and practically all the county societies approached have cheerfully accepted the additional fee for membership in the State Association, namely, fifteen dollars.

If all of our meetings could be conducted in this same enthusiastic manner it would be a great pleasure to attend a county society meeting. But then there were important subjects under discussion and President Erb deserves great credit for his arrangement of the program and his acquisition of the men he brought before the Society.

PAY-PATIENTS FOR FREE HOSPITALS

This theme has been worn almost threadbare, yet there is no harm in discussing it from the viewpoint of the city man or the man from out-of-town. During the early days of the faculty and while the writer was one of the members, the admission of patients to the University Hospital, which was then in contemplation and perhaps in course of construction, was made a part of the state program for admission to the hospital of the sick poor. The document stated without evasion or without lessening its force that the University Hospital was built for the sick poor of Minnesota. The rules for admission at that time were that the poor patient should be certified as poor and needing State aid by the County Commissioner, a physician, and a minister, in order that there would be no evasion of responsibility and in order that no patient who was able to pay should be admitted to the University Hospital. As is quite natural under the circumstances, these rules have become more or less relaxed, and the result now is that the Hos-

pital has been extended and enlarged and other methods have been adopted for the admission of patients, just as Dean Lyon said in his radio speech.

Dean Lyon seems to have no idea that the admission of patients other than from this angle is an injustice to other hospitals, an injustice to the men in the cities and an equal injustice to the men in the country. Since his speech was broadcast the number of admissions into the University Dispensary has diminished somewhat, and the men in the country who find they are unable to get patients into the University Hospital have adopted the original plan of having the poor person certified by the County Commissioner and sent to a local hospital either in his home town or in his district; and then some physician or surgeon has given his services free, whether it be a medical or surgical case. The result is that much of the clinical material has thus been diverted into private, county, or district hospitals that might have come to the University Hospital had the men in the country felt that they were being dealt with fairly. This does not happen in Minnesota alone. It is so in Iowa, and there is a good deal of trouble about the admission of patients, sometimes for personal reasons, sometimes because the doctors are jealous and do not want their patients to go away, but more often it is due to the fact that the patient may be an emergency case needing care at once and consequently can be best cared for, and life conserved more promptly, by sending him to a local hospital and putting him in charge of a physician in the county. One other reason, too, for the diversion of some of these people from getting State aid at the University Hospital is that the expense of transportation from one part of the state to another is so great that the County Commissioners are willing to do anything that will lessen their burdens. Perhaps some of the University men may feel that the patient does not get as good care as he should, but, on the whole, this is not a valid objection because men in the country are quite as competent in most ways as men in the city; they are harder-headed, they have to meet propositions on their own responsibility and under circumstances which do not confront the man in the city.

We feel, too, that in our county hospitals, and our general hospitals, both in Hennepin and Ramsey Counties, a good many admissions are made into the hospital to people who are able to pay hospital fees, as well as physicians' fees. But, somehow or other, they get in, in spite of all the defences that have been put up. To have the

University Hospital throw its doors open to three classes of patients is the exasperating idea which confronts the men in the country and city. Of course, we may be needlessly uneasy about these things, but they are things that should be discussed, and a remedy should be sought for the disease which affects the body politic. For instance, it is well known that the University Hospital takes in poor people, and the State and County share in the care of the patient, that is, there is an expenditure for each patient of about \$1.50 a day by the County and an equal amount by the State. The second class of patients that come to the University Hospital includes those who are able to pay for their bed and board, but are unable to pay the doctor's fees for operations and other services. The Dean says these can come from Minnesota or elsewhere on their own initiative, without formality. A charge of three dollars a day covers everything except a few extras like x-ray and operating room; and those who know about operating a hospital know that these "few extras" amount to quite a considerable sum. Incidentally, these are the people who come into the free hospitals misrepresenting their financial state and occupying a bed or space that should be occupied by some deserving poor person. A third class of patients (and this applies particularly to the University Hospital because of the terms of the gift of the Cancer and Todd Hospitals) may avail themselves, according to the Dean, of hospital facilities; they are assigned to the service of the head of the proper department, at a cost to them of five dollars a day, including room, board, and general nursing care—approximately what a bed in other general hospitals throughout the city would cost. But, in addition to that, they must employ a physician who belongs to the Hospital staff or to the faculty, and for their special treatment they pay him whatever fee he may decide to charge. There is where the injustice of the whole proposition comes in, and where the management of the entrance to the hospital is defective. Also, one may have even a better room and better accommodations than is furnished with a five-dollar room, thus bringing it into keener competition with other hospitals which are struggling, sometimes, for a bare existence.

As we said before, we may be unduly alarmed and uneasy about the situation, for Dr. Baldwin, the Superintendent of the Hospital, submitted figures to show that from July 1, 1925, to March 31, 1926, there were only 106 patients in the Hospital out of a total of 2,552 patients treated in the institution (that does not say whether they

were in the Hospital or whether this included the Dispensary); there were 1,238 county and state patients, 845 pay-patients (able to take care of hospital bills but not doctor bills), and 458 free patients. This estimate of patients and the division in classes does not take into consideration that the Todd and Cancer Hospitals have only just recently been completed. Another situation which is confusing to the men of the country is that they have a Health Service on the Campus; but this really has nothing to do with the Hospital or Dispensary because these people are treated by a special staff and are treated entirely in another building. This, of course, is a condition which may be abused. For instance, a student who is sick and who is sent in for examination and investigation not infrequently reports that he is cared for by the Health Service; and later his father or mother or sisters or brothers come down for the same service. These people are not always discovered except by some members of the staff who are keenly alive to such irregularities, when they are promptly sent to other places. THE JOURNAL-LANCET wants to call attention to the fact that there is no real relationship between the Medical School and this Health Service, even though both are subject to more or less irregularity.

NEWS ITEMS

Dr. H. M. Fisch has moved from Fairmont to Austin.

Dr. J. R. Sturre has sold his practice and hospital at Watkins.

The new Community Hospital of Hendricks was dedicated last month.

The City of Red Wing has accepted the gift of the Red Wing Hospital.

Dr. L. C. Combacker has moved from Appleton, Wis., to Stillwater, Minn.

Dr. George B. Irvine has moved from Lake Preston, S. D., to Lake City, Minn.

Dr. Alfred T. Baker, of Minneapolis, has gone to Europe to spend three months in special study.

Dr. G. L. Hagen, of Minneapolis, has returned to the city after spending the winter in California.

The new wing of St. Joseph's Hospital of Dickinson, N. D., was completed last month and dedicated.

Dr. D. W. Wheeler, of Duluth, was married last month to Miss Della Hinshaw, of River Forest, Ill.

The Shriners' Hospitals in various parts of the country are curing 6,000 crippled and deformed children annually.

Dr. Moses Barron, of Minneapolis, leaves for Europe next week to spend a year in postgraduate work in Vienna.

Dr. J. C. R. Charest, formerly of Murdock, has opened a hospital in Marshall, where he has practiced for the past year.

The physicians of Montana are giving a series of health talks over broadcasting station KUOM at the University of Missoula.

Dr. W. W. Moir, of Minneapolis, has gone to Europe for a visit to different countries and their hospitals. He will be absent three months.

Minnesota and the Dakotas hold their annual State Medical Association meetings between May 17 and May 26. We have already published their programs.

Work has been begun on the new \$200,000 hospital building in west Duluth to be erected for Dr. E. E. Webber, of Proctor, the large railroad center near Duluth.

The Catholics of Mankato and North Mankato have appointed a committee of fourteen to make plans for building an addition to St. Joseph's Hospital at Mankato.

Dr. Charles E. Blankenhorn, of Malta, Mont., has sold his practice to Dr. W. E. Thomson, of Sheridan, Wyo., and will take an extended course of postgraduate work.

Dr. T. J. Billion, of Sioux Falls, S. D., has been elected a member of the Board of Health of that city to fill the vacancy made by the resignation of Dr. W. F. Keller.

The library of the Wisconsin Academy of Medicine, one of the finest collections of medical books in the country, has been opened to every licensed physician in that state.

Dr. G. G. Cottan, of Sioux Falls, S. D., Colonel in the medical Corps of the Army Reserve, has been ordered to the medical field service school at Carlisle, Pa., Sept. 12 to 26.

Dr. Peter A. Slattery, of the Red Lake (Minn.) Indian Agency, is changing places with Dr. Harlan, of the Indian Agency at Dulce, New Mexico. Dr. Harlan left the Red Lake Agency four years ago.

The summer meeting of the Northern Minnesota Medical Association will be held in Crookston on August 9 and 10. It is believed that the

meeting will be the largest ever held by the Association.

A Tuberculosis Institute for Nurses will be conducted this year at the University of Minnesota on June 14-19 in co-operation with the Hennepin County Tuberculosis Association and the Glen Lake Sanatorium.

Dr. Leon Velasco Blanco, of the University of Buenos Ayres, South America, visited the University of Minnesota last month, and arranged for an exchange of professors of the medical schools of the two universities for next year.

The Blue Earth County Medical Society, at a recent meeting held in Mankato, passed a resolution against uniting with other counties in the support of a tuberculosis sanatorium and in favor of a sanatorium in Mankato for Blue Earth County.

Dr. J. A. Donovan, of Butte, Mont., was elected chairman of the Section on Ophthalmology of the American Medical Association at the Dallas meeting last month. This Section of the A. M. A. is one of the largest and most prominent of the fifteen Sections of the Association.

The Redwood-Brown County Medical Society held its annual meeting at New Ulm last month, when the following officers were elected: President, Dr. F. H. Dubbe, New Ulm; vice-president, Dr. J. S. Shrader, Springfield; secretary-treasurer, Dr. W. A. Meierding, Springfield.

Dr. Henry C. Windell, of Williston, N. D., died last month at the age of 55. Dr. Windell was a graduate of McGill in the class of '02 and had practiced in North Dakota since graduation and in Williston for the past fifteen years. He was prominent in business and professional circles in Williams County.

A committee of the Minnesota State Medical Association is planning to conduct popular medical meetings all over the state the coming autumn. The members of the committee are the following: Dr. Frank J. Savage, Chairman, St. Paul; Dr. C. B. Wright, Minneapolis; Dr. W. L. Burnap, Fergus Falls; Dr. W. A. Coventry, Duluth; and Dr. George Earl, St. Paul.

The Madison District Medical Society of South Dakota met at Madison, April 30, and enjoyed the following program: "Acute Ear Conditions, Complicating Influenza," by Dr. C. C. Hoagland, Madison; "Diagnosis and Treatment of Stone in the Ureter," by Dr. R. S. Westaby, Madison; "Cardiac Irregularities," by Dr. J. R. Westaby, Madison. General Discussion.

Dr. George McC. Boteler has moved from Aberdeen, S. D. to St. Louis, Mo.

Paul W. Farr, a student in the Medical School of the University of Minnesota, and a son of Dr. R. E. Farr, of Minneapolis, was drowned in Cedar Lake (in Minneapolis) on May 11.

The State Homeopathic Medical Society and the State Eclectic Society of South Dakota met in joint annual session at Sioux Falls, S. D., last week. All officers were re-elected for the current year.

Dr. William G. W. Tupper, of Minneapolis, died last week at the age of 65. Dr. Tupper was a graduate of the University of Michigan, class of '84, and had practiced in Minneapolis most of the time since his graduation.

At the North Dakota Health Officers Association meeting, held in Bismarck last week, the following officers were elected: President, Dr. W. P. Thelen, Wilton; vice-president, Dr. E. C. Haagenon, Grand Forks; secretary-treasurer, Dr. A. A. Whittemore, ex-officio, Bismarck.

The action of the Hennepin County Medical Society in regard to the admission of pay-patients to the Hospital of the University of Minnesota is discussed editorially on another page. The Ramsey County Medical Society has appointed a committee to investigate the practice; and the whole subject will be taken up in the meeting of the Minnesota State Medical Association next week.

The following is the list of doctors from Minnesota and North Dakota who joined the party for the Inter-State Post Graduate foreign clinic assemblies: Minnesota,—Dr. August Kuhlmann, Melrose; Dr. and Mrs. Wm. W. Moir, Minneapolis; Dr. O. A. Olson, Minneapolis; Dr. Alexander Stewart, St. Paul; Dr. Stella L. Wilkinson, Duluth; and Dr. and Mrs. Louis B. Wilson, Mayo Clinic, Rochester. North Dakota,—Dr. and Mrs. W. H. Witherstine, Grand Forks. There were none registered from South Dakota and Montana.

In the death of Dr. John L. Harris, of Webster, S. D., which was briefly noticed in our last issue, that state and the medical profession lost one of the pioneer physicians whose service in Dakota Territory was a work of great usefulness, and for such work he was held in great honor by his fellow-men. He studied medicine under an able practitioner, Dr. Butherick, of Battle Creek, Mich., and later in medical schools of Chicago, including postgraduate work. He began practice in Michigan, and soon moved to Web-

ster, S. D., where he practiced for 43 years, doing a pioneer work full of hardships, but equally full of honor manifested in a warm personal friendship with almost every resident for many miles about the home he planted in Webster 43 years ago.

MEETING OF THE SIXTH DISTRICT MEDICAL SOCIETY OF NORTH DAKOTA

The second meeting of the Sixth District Medical Society of North Dakota was held April 13, 1926, at 7 p. m., at the McKenzie Hotel, Bismarck, N. D.

The meeting opened with a seven-course dinner, followed by a short business meeting.

Minutes of last meeting were read and approved uncorrected.

Under unfinished business amendment to Chapter 2, Section 2 of the By-laws was taken from the table and passed by a unanimous vote. To wit:

The following shall be substituted for the first sentence in said section:

"All meetings of the society shall be held at the discretion of the program committee. Not less than four meetings shall be held in each year."

Communication from Dr. John Rindlaub, President of the North Dakota State Medical Association relative to the proposition to have the State Association keep a representative at the State Legislature at each session, was read. The question was discussed freely, and Dr. Quain moved that the Sixth District go on record as in favor of the proposition that the State Association maintain a representative at the State Legislative sessions; seconded by Dr. Leavitt and carried.

Dr. Stackhouse moved that a committee be appointed to draw up a resolution of condolence and convey it to the family of Dr. C. G. Forbes, of Washburn, N. D.; seconded by Dr. Bodensstab; and carried.

Scientific Program

DR. STRAUSS, Chairman of Program Committee in the Chair

"Some Aspects of the Dayton Trial." By Judge Sveinbjorn Johnson, Member of North Dakota Supreme Court.

Summary: "The trial was unique due to the character of the question involved, that is, that the theory of evolution is wholly contradictory to the account of creation as taught in Genesis, and that no theory should be taught in public tax-supported schools implying that man originated from the lower animals. The best definition of evolution is "that a gradual change occurred from form to form in a connected series the fittest forms surviving."

"Implicated with this is the question as to whether a state has the constitutional right to pass such a law. This question may eventually have to be settled by the Supreme Court of the United States. It is the old question of State rights in a new form. In deciding upon the constitutionality of any question the court always takes into consideration what the constitution intended it to mean.

"In the Hebrew the account of creation is given as being instantaneous by divine fiat. The states of New Hampshire, Massachusetts, and Connecticut

have laws based upon the assumption that creation was instantaneous. However, the United States Constitution states 'that the rights of the individual shall not be curtailed.' Apparently the originators aimed to avoid the development of a State religion.

"The theory of Evolution, popularly is new and popularly originated with Darwin's 'Origin of Species.'

"The Tennesseans believe that such legislation is constitutional in that such teaching in the schools tends to a breach of the peace. Especially since the theory of Evolution is wholly unproved and imaginary.

"North Dakota has a statute making it a misdemeanor to speak contemptuously of God, the Son, the Holy Ghost, and the scriptures; that is, it is a breach of the peace since the belief in Deity is so common as to cause riot if His name is maligned.

"The chances are that the Supreme Court will find a way to avoid making a definite decision on either side of the case. They will be rather dumb if they do not."

Paper: Nephritis, General Considerations, Prognosis, and Treatment. By Dr. H. O. Altnow, Minneapolis, Minn. Formerly of Mandan, N. D.

The talk was based on the following outline:

1. Normal kidney function.
2. Disturbed kidney function.
3. Dr. Cushny's theory of cast formation.
4. Features of renal insufficiency.
5. Dr. James P. O'Hare's clinical classification of nephritis.
6. Outstanding clinical features of the acute nephritis.
7. Elements to be considered in the prognosis of nephritis.
8. General principles involved in the treatment of nephritis.

A motion was made by Dr. Schipfer that Dr. Altnow be made an honorary member of the Sixth District Medical Society; seconded by Dr. Leavitt. Carried. Adjournment.

R. W. HENDERSON, M.D.

Secretary and Treasurer of the
Sixth District Medical Society,
Bismarck, N. D.

Bucky Diaphragm for Sale

Will sell an Engeln Bucky Diaphragm in first-class condition for \$150. Address 145, care of this office.

Minneapolis Office for Rent

On the best business corner on the East Side. Inquire of the East Side Pharmacy, 400 East Hennepin Ave.

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For spring and summer in a Minnesota county-seat town. Salary and expenses. Address 152, care of this office.

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A desirable location for a physician and a dentist is offered at Nicollet Ave. and Lake St. Reasonable rent. Telephone So. 6149, or address J. H. Light, 2939 Nicollet Ave.

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Fine front office space for rent in the Syndicate Building for dentist or physician at very reasonable rent. Call upon or telephone David T. Jones, Dentist, 416 Syndicate Bldg., Telephone Ge 5204.

Office Position in Minneapolis Wanted

By a young woman who has taken a course in laboratory training and can do routine work. Is a typist and will take charge of office. Will accept very moderate salary. Address 161, care of this office.

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Desires position in Twin Cities or vicinity. Capable of doing Blood Counts, Urinalysis, Wassermanns, Serology, Blood Chemistry, Gastric Analysis, Milk and Water Analysis, and Tissue Staining. Address 151, care of this office.

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Efficient and dependable technician desires position. Is a graduate in clinical laboratory work and have had eight years' experience in doctor's office and hospital as x-ray, laboratory, and physiotherapy technician and assistant. Has had one year's experience in hospital nursing and some training in anesthetics. Prefer position in office or clinic. Will go out of city. Excellent references. Address 160, care of this office.

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CRIME AND ITS RELATION TO PSYCHIATRY

BY ALEXANDER G. DUMAS, M.D.

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MINNEAPOLIS, MINNESOTA

The subject of this article is one on which considerable has been written and one that has held the attention of neuropsychiatrists for a number of years. It occurred to the writer that the present subject would be quite timely owing to the investigation now being conducted by a Crime Commission of the State of Minnesota which was recently appointed by the Governor. The stimulus that resulted in the present study by the State of the subject of crime, the criminal, punishment, and methods of parole was the outgrowth of a bandit killing a Minneapolis policeman after shooting a store keeper in a holdup. This man had twice been in the State Penitentiary at Stillwater and also at one time an inmate in the State Hospital for Criminal Insane.

The Crime Commission appointed by the Governor is composed of twenty-two men and three women. In reviewing the personnel of the Commission, it is noteworthy that there is not a single member of the medical profession on this board. The following questions were given to this Commission for investigation by the Governor:

"Does our criminal law adequately define the crimes that are being committed?

"Does it provide penalties that are adequate to deter men from committing crimes?

"What changes, either in law or court rules, are needed to expedite the machinery of justice, to make justice quicker and more certain?

"What changes can be made in our machinery

of law enforcement, outside of the courts, that will insure a more general apprehension of criminals and closer surveillance of those with known criminal tendencies?

"Should the system of indeterminate sentence be continued, or should imprisonment be for definite terms fixed by the courts?

"If the indeterminate sentence system is to be continued, should the composition of the Parole Board, which now consists of the senior member of the Board of Control, the Warden of the Prison, the Superintendent of the Reformatory, and one citizen appointed by the Governor, be continued, or should the Parole Board be differently constituted?

"What changes in the rules and methods of procedure of the Parole Board could be made which would tend to remove possibilities of error?"

In addition to the questions submitted by the Governor for investigation, the following additional inquiries occurred to the writer as being very pertinent to the subject under discussion:

1. What percentage of criminals in prison suffer from mental disease or deficiency?

2. What is the relation of crime to mental disease in the criminal?

3. How can psychiatric counsel be of value to the courts, the parole boards, and those dealing with criminals in assisting them to settle their problems in a practical way?

4. What will be the value to the State and courts of the practical application of modern psychiatry to the problem at hand?

The writer will endeavor briefly to discuss these questions and summarize in part what psychiatry has to contribute to this subject and outline the part that this branch of medicine can play in solving the questions now before the State Crime Commission.

The results and conclusions from psychiatric studies made relative to the occurrence of mental disease in a large series of admissions to prisons is as follows: The most extensive investigation of this kind was one conducted by Bernard Glueck¹ in which 608 adult prisoners studied by psychiatric methods in an uninterrupted series of 683 admissions to Sing Sing Prison, 66.8 per cent had shown throughout life a tendency to behave in a manner at variance with the behavior of the average normal person, and the deviation from normal behavior had repeatedly manifested itself in criminal actions. Of this series of 608 cases, 59 per cent were classifiable in terms of deviation from the average normal mental health; 28.1 per cent were intellectually defective, possessing an intelligence equivalent to that of the average child of twelve years or under; 18.9 per cent were constitutionally inferior or psychopathic to so profound a degree as to have rendered extremely difficult, if not impossible, adaptation to ordinary requirements of life in modern society and 12 per cent were found to be suffering from distinct mental diseases or deterioration, in a considerable number of which the mental disease was directly or indirectly responsible for the antisocial activities. Similar studies in other prisons have shown this percentage to be slightly lower, in the neighborhood of 50 per cent. These studies naturally bring up the question of "insanity dodge," and I will quote William A. White,² the well-known psychiatrist and superintendent for the past nineteen years of St. Elizabeth's Hospital, the Government institution for the criminal insane at Washington, D. C. He says:

"First, it has been pretty widely assumed that insanity was used very frequently as a plea to save the criminal when all other means failed, and the 'insanity dodge' has come into existence by popular consent as a symbol of sharp practice by unscrupulous attorneys and none too honest medical men. I can best express the facts by stating, first, that in my personal experience I have never known a criminal to escape conviction on the plea of 'insanity' where the evidence did not warrant such a verdict except in cases where

the jury brought in a verdict of 'unsound mind' for the specific purpose of exonerating a defendant who was obviously technically guilty. The jury in such cases are not fooled but intentionally make use of a plea in order to permit a defendant to escape the consequences of his act, finding themselves in sympathy either with the act as such or with the defendant who committed it because of the peculiar circumstances of the situation.

"Second, it is not the experience of those who have charge of institutions for the criminal insane to find that patients are sent to them from the courts who have been found 'not guilty' because of 'insanity,' but who are in fact not suffering from a mental disease. I have never personally known of such a case in a quite extensive experience, and my experience has been the same as others.

"Third, upwards of 50 per cent of the criminals who are convicted and sent to prison are, upon arrival, suffering from some form of mental deficiency or psychosis which is obvious as a result of any well-established and accepted method of examination. In other words, the error is in exactly the opposite direction from that popularly supposed. Not only do no criminals get off by the 'insanity dodge,' but over 50 per cent of those who are convicted are suffering from mental disease or deficiency."

The above situation has been the outgrowth of the present status of expert testimony where an individual is indicted and brought to trial for a criminal offense, and a plea of irresponsibility due to insanity is entered. One expert will testify as to the insanity of the defendant, and another will give testimony to prove the opposite. This is followed by cross-examination, and by the time the case gets to the jury they are in such a quandary as to what it's all about that the whole medical testimony is disregarded. A remedy for the discrediting of expert testimony will be offered further on in this paper.

It is the feeling of psychiatrists that they have a sort of experience in dealing with the practical social problems of human behavior that entitles them to speak with some authority, and that makes the result of their experience a valuable contribution to the question under discussion. To quote White,² "A study of the progress of psychiatry during the past thirty years shows the gradually enlarging concept of mental disease slowly closing the poor-houses and correspondingly covering their defective inmates into State institutions for mental disease, where they are infinitely better and more intelligently cared for,

and it will show the out-patient department of these institutions sending skilled social workers into the families of former State Hospital patients and making social adjustments that prevent not only recommitment, but conduct that we are accustomed to call criminal.

"In these and innumerable other ways modern psychiatry has been dealing with its problems of human behavior and adjustment, while the law with almost the single exception of the Juvenile Courts, has been proceeding in its old accustomed way.

"It appears that the time has arrived for the law and those dealing with the problem at hand to take cognizance of what has been accomplished through the practical application of modern psychiatry to the problems of human behavior and adjustment."

Sociologically, crime is an abstract term applicable to socially destructive tendencies manifested either by individuals or groups of individuals. Criminal law is calculated to antagonize these tendencies and to express in its operation what in its primitive roots was the spirit of retaliation and vengeance. It follows that the whole point of view of the criminal has grown up from the point of view of the social group, and criminal laws undertake to define those acts which are criminal. Anyone found guilty of such acts is by definition "criminal." There is a general feeling, I believe, among the laymen that the criminal is a social type of individual capable of an accurate description as a species. Convicts convicted of the same crime have been studied by criminologists as to anatomy and physiology, and a hypothetical abstraction has been formulated as to type. Unfortunately, such studies are too narrow and their results of little value because this process of measuring individuals of a chosen group is nothing but an intellectual abstraction. It may be admitted that criminal conduct is relatively primitive in type, but that does not disclose anything of the type of individual who may have reacted in that particular way at some particular time. A survey of a group of criminals convicted of the same crime will show quite the contrary. The immediate situation back of the act of robbery may be, in one case, poverty; in another, kleptomania; in another, disintegration of personality due to alcoholism, morphinism, or syphilis (paresis); in another, a maniacal lack of restraint (manic depressive psychosis); in another, failure of development of social instincts, mental deficiency; while in another it may be due to the lack of education and the influence of dominating and

evilily disposed associates. It can be noted that the conditions are widely different, but were all an issue in an act of the same kind. In this group of individuals may be found the highly endowed, such as the neurotic and others fundamentally defective. In one case the crime may be the result of a personality makeup (the moron), while in another the expression of mental disease (acute mania which is a transient recoverable disease).

White² says that "From the psychiatric point of view the criminal as such has ceased to exist, and in his place are the individual offenders of the criminal law, each one of whom must be studied in order that he may be understood and the motives that prompted his conduct disclosed as interactions between his peculiar personality makeup and the actual problems with which at the time he was confronted. Such an approach is no longer content with the simplistic formula of crime and punishment. It does not blind itself at the start by such formulations as sin or degeneracy or criminal makeup or antisocial instincts, but attempts to get at the dynamic factors involved and understand how they produced the result. It is dominated by a relief in psychological determinism, in other words, by the belief that in the psychological sphere, as well as in the physical, whatever takes place can be explained by what went before and out of which it developed. Individuals do not just arbitrarily will to act thus and so, but back of such a final determination lie certain discoverable motives which are expressions of their personality makeup, which in turn had its growth and development conditioned from the beginning by innumerable factors, the main ones of which can be given their place in the scheme. In some the disease may be a chronic and incurable one (paresis). In one the neurosis treatment may be of value; in the other, it may be of no value (paresis). These conditions of mental defectiveness are of such a nature as to make difficult or impossible those reactions demanded by a highly complex society and, therefore, tend to unloose similar ways of reacting which may be criminal. The possibilities are infinite, but as they unfold the definiteness of the conventional and formal concept of the criminal recedes further into the background until finally it is no longer in the field of vision."

The principles of criminology dictate that the criminal, and not the crime, should be the matter of prime importance and consideration, and that the sentence or decision of the court should be calculated to cure the social illness as has been

shown to exist in the conduct of the defendant. The situation is similar to the relation between physician and patient only that here the disease is not individual but social, and the State takes the place of the physician.

Under the above principles a person committing a minor offense might have his liberty restricted for the rest of his life if study of his conduct, behavior, and mental status shows he should never be a free citizen. The surgeon does not treat every case of appendicitis the same. The onset, present condition of patient, age, previous medical history—all have to be taken into consideration before a plan of treatment is decided upon. It is just as illogical to sentence a person who committed a certain crime to a certain punishment as to decide when a man enters the hospital for treatment upon the day when he is going home. We do not discharge a patient from the hospital until he is well; likewise a criminal should not be discharged from any institution, penal or otherwise, until he has been studied from the psychiatric side and a determination made as to whether he is able to take his place as a responsible member of society.

White² says, "To approach the problem of criminology in this way would require considerable changes in our legal machinery. It would require, among other things, that judges should specialize along the lines of their individual interests, just as physicians specialize in their profession.

"Theoretically the jury should be limited to a determination of the facts; that is, in a criminal case, it should pass only upon whether the accused did or did not commit the antisocial act as charged. If he is found guilty then it should be the right of the State to prescribe the treatment which, after careful consideration by those skilled in such matters, seems calculated to effect the best results in the end. In this way many a youngster might well be saved from a career of crime by not contaminating him with the influence of the prison, and definitely antisocial characters could be indefinitely confined at useful occupation instead of repeatedly being set free to take up their criminal practices again with the necessary expense and lost motion incident to again apprehending them, and a repetition of the same old process of trial and conviction.

"Of course it is fully appreciated that under the present rules of practice and controlled by the present concepts of crime, responsibility, guilt, and innocence such results could not be effected. But such static concepts are beginning to break down, and their place is gradually

being taken by a more intelligent and a more dynamic appreciation of the nature of human conduct."

The committee of the American Institute of Criminal Law and Criminology, which is composed of Albert C. Barnes, Judge of the Superior Court, Chicago; Orrin N. Carter, Justice of the Illinois Supreme Court; Edwin R. Keedy, Chairman, Professor of Law in the University of Pennsylvania; Adolf Meyer, Professor of Psychiatry in Johns Hopkins Medical School; William E. Mikell, Dean of the Law School, University of Pennsylvania; Harold N. Moyer, Physician, Chicago; Morton Prince, Physician, Boston; William A. White, Superintendent Saint Elizabeth's Hospital, Washington, D.C., has undertaken to draft a statute which attempts a partial solution of the difficulties that arise where the existence of a mental disease becomes an issue in the trial of a case. Most suggestions for improving conditions fail to take into account constitutional limitations or firmly grounded methods of procedure, and so never get anywhere. The above committee have tried to incorporate only such changes as are practical. The laws suggested are The Criminal Responsibility Bill with Sec. 1 dealing with the subject of When Mental Disease is a Defense, Sect. 2, Form of Verdict, and Sect. 3, Inquisition. An Expert Testimony Bill, Sect. 1, with the Summoning of Witnesses by Court, Sect. 2, a Written Report by Witnesses, Sect. 3, Commitment to Hospital for Observation. The statute as written corrects the method of procedure now used as it attempts to remove the element of partisanship, real or implied, now existing. It calls for the summoning of experts by the Court to give an impartial disinterested report. The examining physicians can be examined by the counsels for both parties.

The state hospitals are brought into service for observation under this plan, and when the defendant is found to be mentally ill he is at once committed to the State Hospital for Insane for treatment to remain there until he shall have so far recovered as to no longer be a menace to public safety.

This procedure permits the expert to submit a written report of his examination, and he will be permitted to read it without the interruption so commonly seen in the court room during criminal trials of to-day.

White² says, "Conduct which is criminal or insane is only the conduct of individuals who cannot effectively deal with the situation in which they find themselves. Such conduct shows no

tendencies that are not present in perfectly normal people; the only difference between it and normal conduct is the difference of emphasis upon certain instinctive directions."

This statement may very likely be received with incredulity, but with a little thought along the lines of the suggestions to follow it will not be difficult of comprehension. Criminal conduct is in its nature infantile. It is conduct of undeveloped, relatively infantile, individuals placed in a situation where adult responses, adult forms of reaction are expected of them. The designation *infantile* is here used to apply particularly to the affective, the emotional aspects of the mental life. It is not only possible, but in fact it is quite frequent, to find an individual highly endowed intellectually but of very childlike personality make-up on the emotional side. Now it is this lack of development on the emotional side that is fundamental to the understanding of the psychology of the criminal. The difference therefore between the criminal and the normal man is only one of degree, not of kind. In one the lack of appreciation of mine and thine, the lack of control of the temper and innumerable other characteristics have remained at their infantile stage of development and the conduct resulting is not assimilable by the body social; in the other the tendencies that are represented by those characteristics have been gotten under control and adequately directed and utilized in the course of the individual's further development—they have been brought under the direction of the personality and utilized to serve socially acceptable and constructive ends.

"Now then conduct looked at from this broader viewpoint is seen to be made up of expressions of more or less effective and efficient reactions of adjustment. To label it criminal, insane, or what not has undoubtedly been of service in the past development of an understanding of the problems involved, but for the next step it is necessary to break away from the static restrictions that are implied in such definitions. For the next step a broader and a deeper vision is necessary, a vision that sees through and beyond these definitions."

The manner and means of bringing the above facts to the attention of those dealing with crime and the criminal is one of the most important problems before psychiatrists of this State to-day if we are to play our proper part in assisting to solve the question now before the Crime Commission. The part the psychiatrist should play, as well as the relation of crime to psychiatry, needs only investigation to establish its undeniable

importance. There exists in this state an utter lack of appreciation of the practical application of modern psychiatry to crime. I feel that this is due to the fact that there has never been a definite program of co-operation between lawyers and psychiatrists, such as is necessary in order that this important subject can be properly attacked and constructive measures adopted.

It must be recognized that the leaders in both professions have long been eager for some plan of co-operation between psychiatrists and lawyers and based upon a study of the literature on this subject, I am quite sure the next few years will witness a re-approachment between the legal and psychiatric professions.

In order to show the trend of thought in this regard, I wish to quote from Roscoe Pound, Dean of the Harvard Law School and of American legal scholars, in a brief statement criticising criminal law and especially its relation to insanity:

"Our traditional criminal law thinks of the offender as a free moral agent who, having before him the choice whether to do right or wrong, intentionally chose to do wrong * * *. We know to-day * * * that the old analysis of act and intent can stand only as an artificial legal analysis and that the mental element in crime presents a series of difficult problems."

As a further indication that we must not overlook the fact that in dealing with the criminal we have a combined legal and psychiatric problem, I quote an English legal authority: "It is obvious that the point of departure of every thorough analysis of the *mens rea* (the 'guilty mind' of the criminal law) must be sought in psychology. On the other hand, it would be idle to contend that modern psychologists can treat such problems without taking heed of the lawyers' requirements and limitations."

S. Sheldon Glueck,³ Instructor, Department of Social Ethics, Harvard University, in an article entitled "A Tentative Program of Co-operation between Psychiatrists and Lawyers," states, "The task before the two professions is, then, one that distinctly requires fair-minded co-operation, both in the study of the weakness of the criminal law and in the discussion of possible improvements upon the existing polity.

"What materials shall first be turned to for the rearing of this monument of co-operation between lawyers and psychiatrists?

"In a general way, and as pertaining to the entire field of law, the progressive legal scholars have already carried us far on the road toward the solution. 'Law must be stable, and yet it

cannot stand still,' says Dean Pound. Similarly, Judge Cardozo believes that 'the law of our day faces a two-fold need: The first is the need of some restatement that will bring certainty and order out of the wilderness of precedent. This is the task of legal science. The second is the need of a philosophy that will mediate between the conflicting claims of stability and progress, and supply a principle of growth.' The American Law Institute, organized at Washington in 1923,⁴ is another co-operative endeavor by all the groups engaged in the development of the law to grapple with the monster of uncertainty and slay him. It proposes a scientific and accurate restatement of the law in specially selected fields."

"The Institute has provided for a special report to consist of a 'survey and statement of defects in criminal justice.' The object of this report is to give * * * an analysis of the cause of existing defects in criminal law and administration which will make possible an intelligent estimate of the results which could be reasonably expected from the restatement of the substantive or procedural criminal law by the Institute. It will also serve to point out the other directions in which effort for improvement in the administration of criminal justice should be directed. In this way the report will be a permanent guide to other agencies than the Institute for the improvement of existing conditions relating to criminal justice and to those willing to give financial assistance to such agencies.

"Though this report was practically completed, it was not made public at the meeting of the American Law Institute, in February, 1924, because of the sudden illness of the chairman of the committee.

"When the restatement of the criminal law is to be undertaken, representative committees from such organizations as The National Committee for Mental Hygiene, The American Psychiatric Association, and the American Ortho-psychiatric Association will, it is presumed, be freely invited to take part in at least the preliminary deliberations."

In Dr. Glueck's article he outlines, among the principal problems to be studied for such a plan of co-operation, first an authoritative medical legal terminology to be agreed upon by the psychiatric, psychological, and legal professions; in addition, the problem of expert testimony, qualifications of experts, hypothetical question, status of psychological tests in the courts, the legal tests of the irresponsibility of the insane, methods of enlargements from hospitals for the "criminal in-

sane," the abuse of the writ of habeas corpus, scientific aid to the courts, all of which are very important questions and have a definite relation to the study of crime and the criminal. The question of the mental examination of the accused persons before trial is discussed at considerable length and the present Massachusetts law is outlined as follows:

"A beginning has been made by the Commonwealth of Massachusetts. The operation of the Massachusetts law, which is the first in the country to provide for the routine mental examination, by the neutral experts of the state department of mental diseases, of certain types of serious offenders is now in effect."

"The law has recently been amended to provide for the imposition of a fine upon 'any clerk of court or trial justice who wilfully neglects' to report to the department of mental diseases for mental examination those accused persons who fall within the purview of the act. The original act provided for admissibility of the report of the experts as evidence at the trial. The amendment eliminates this proviso. Since the amended act still retains the provision that the report of the department's neutral experts 'shall be accessible to the court, the district attorney, and * * * the attorney for the accused,' it is still an effective piece of social legislation. In fact, since the admissibility of the report as evidence might have resulted in the entire act being declared unconstitutional if subjected to test, and since such a declaration might have destroyed the authoritativeness and prestige of the entire act, the present amendment is a wise one and in harmony with Dean Pound's formula of socio-legal progress: 'Law must be stable, and yet it cannot stand still.' In an enlightened community, the fact that the experts making the report represent, not the prosecution nor the defense, not the court, but an agency for the spread of mental health—an agency not connected with the trial and conviction of offenders—will carry much weight with the parties concerned."⁵

The terms of the Massachusetts law require "the psychiatric examination of certain prisoners in jails and houses of correction and provide for the assembling of relevant official information as to such prisoners." The extent of the task assigned is tremendous. The population of the county jails, although moving in and out with exasperating regularity, is very large. The law provides that 'keepers and masters of jails and houses of correction shall cause all convicted prisoners serving a sentence of more than thirty days therein, except prisoners sentenced for non-

payment of fine or of fine and expenses, and all convicted prisoners serving sentence therein who have been previously committed upon sentence to any penal institution, to be given a thorough psychiatric examination by a psychiatrist appointed by the state department of mental diseases; and thorough physical examinations under the jurisdiction of the department of health are also provided for.' Thus far the act provides only for the making of such examinations and the transmittal of the information thus obtained to the department of corrections. The ultimate purpose of the act is as yet relatively vague; but this much is certain, that the administration of this act promises to result in the collection and analysis of a vast amount of material on the little studied problem of the recidivistic misdemeanant."³

The work of planning and carrying out the survey, as well as of preparing the recommendations to the department of correction and the final report, is under the general direction of Dr. Ralph M. Chambers. There are nine psychiatrists, at strategic points throughout the state, who give part-time service, about a dozen psychiatric social workers, a psychologist, and a consulting sociologist, who is aiding in the preparation of the recommendations, as well as the planning and presentation of the report.

A quarry of interesting case material has already been mined; and this, it is hoped, will be of great practical value in suggesting reforms both of criminal procedure and of sociopenal and psychiatric treatment. In addition, it will be of distinct value as teaching material.

CONCLUSIONS AND SUMMARY

There is a high percentage of mental disease in criminals as evidenced by extensive studies revealing upwards of fifty per cent.

Criminals do not get off by the "insanity dodge" but 50 per cent of those convicted are suffering from mental disease or deficiency.

There exists a definite relation between crime and psychiatry, and studies of criminals by well-established psychiatric methods have definitely proven this.

We should spend more time studying the crim-

inal or actor and not so much in consideration of the act or crime. The latter is the prime consideration in dealing with criminals under our present system.

The statutes drafted by the American Institute of Criminal Law and Criminology to overcome the difficulties encountered where mental disease becomes an issue at the trial of a case are worthy of serious study by the Crime Commission of Minnesota.

A definite plan of co-operation between the psychiatric and legal professions in Minnesota would do much to settle many of the problems before the Crime Commission; that such a plan of co-operation is necessary has been recognized by the leaders in both professions nationally and is dwelt on in detail in this article.

The findings of the American Law Institute will bear close study by those interested in Crime and the Criminal. The Massachusetts Laws in reference to examination of accused persons before trial also will bear study by those interested in this subject.

The personnel of the Parole Board of this State should have at least two psychiatrists and one psychologist, and have access to trained social workers for the examination of all applicants for parole in order to determine whether or not they are suffering from mental disease and are responsible persons to be turned back to society.

The present Minnesota Crime Commission is the first appointive body of its kind in recent years that has not had members of the psychiatric profession on it. It is impossible for the psychiatrist to understand how any practical recommendations relative to the dealing with crime or the criminal can be made without considering the application of modern psychiatry to this problem.

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INTUSSUSCEPTION*

BY ALBERT B. STUART, M.D.

CLOQUET, MINNESOTA

Intussusception may well be called an anatomic and physiologic accident in which a portion of bowel becomes invaginated and incarcerated in an adjacent segment.

I am aware that this definition does not include the pathological, but a brief consideration of causation will show that the anatomic feature or the pathological-anatomic feature, if you will, is still the dominant factor.

One is immediately struck with the dominance of the mechanical in a study of the cause of intussusception. Although intussusception is a condition mainly of childhood, still it does occur in the adult, and when it does so there is practically always a deviation from normal anatomy to explain the condition. In other words, we must add something to peristalsis with all its irregularities to explain intussusception. There must be some anatomic aberration, slight though it may be, to make for permanence. Like the hernia subject with his defective abdominal wall, I believe that the intussusception subject could be shown to have deviations in anatomic structure that render him liable to his affliction. This seems the more reasonable when we consider that recurrence has taken place, and does take place, in a certain percentage of subjects. There is also the chronic case with its recurring attacks to bear out this idea.

Bearing in mind this dominance of the mechanical, let us look over our list of causes assigned: enlarged mesenteric glands with striæ of tissue attaching to bowel wall and making a point of fixation; neoplasms in general of the intestinal wall; adhesions from intra-abdominal inflammation; irritative intra-intestinal processes; and the perennial disturber, Meckel's diverticulum. All these stress the anatomic or mechanical.

There is one point in the intestinal tract where the smallest aberration from the normal would give the greatest chance for trouble, and this is the ileocecal junction. As a result this point gives 88 per cent of our cases. The right-angled junction of ileum and cecum, the disparity in size of the two portions of bowel, along with the ileocecal valve and appendix, make up a mechanical complex suited for the invagination and incarceration of a proximal segment.

It is stated that the formation of an intussus-

ception is at the expense of the distal portion of bowels. The initiating factor in the ileocecal type, however, is the entrance of ileum through the ileocecal valve. From then on it seems that the colon advances, engulfing the mass formed and carrying it further along its own course. It needs some fixation, however, to initiate the process. I do not believe that aberrations of peristalsis alone can completely explain it. No doubt the intestine invaginates itself many times, only to have the invagination freed by succeeding peristaltic waves. Intussusceptions small in size and usually in the small bowel are frequently found at autopsy. I counted six in the ileum of an adult autopsy subject last year. They were from one to four inches in length and were undoubtedly spasmodic, induced, no doubt, by the quality of the moonshine that caused his death.

The experiments of Nothnagel have shown that invaginations can be produced at will in the living subject by the application of the electric current to the intestinal wall. The intestinal wall is thrown up in a ridge by the electrically produced spasm, and the distal portion then enfolds and engulfs the proximal.

No doubt spasmodic intussusceptions of a similar type are frequently produced in the intestine. Purely spasmodic invagination is automatically relieved by a relaxation of the spasm and a succession of normal peristaltic waves. Thus they do not become clinical entities. It seems that the mechanical or anatomical factor must be added to make the invagination permanent. Let the intussusceptum drag in an enlarged mesenteric gland, a polypus, or a portion of mesentery to act as a lug, and we are making for permanency. Edema aids the fixation, and the distal portion of bowel gradually advances, being thrown up in a series of ridges and carrying the fixed mass farther along the course of the distal bowel.

The literature is crowded with records of intussusceptions due to abnormal mechanical factors. One man records invagination of the pyloric portion of the stomach in the duodenum—the cause a neoplasm of the pylorus; another records cases due to polypi of the intestine; a third speaks of abnormal mobility of a portion of the intestinal tract, all stressing the mechanical factor.

With such conditions we should expect the

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symptomatology to be such as we find it. Intussusception is intestinal obstruction. If complete, then the whole classic entity of obstruction; if incomplete or of a chronic or self-reducing type—and such occur—then we have an obscure symptom group that may well be puzzling.

Fortunately for the diagnostician, if not for the patient, the condition is mainly an affection of childhood. Statistics as to age incidence show that 70 per cent occur in the first year of life and about 92 per cent in the first five years. This narrows the field, and the fact that 88 per cent occur in the ileocecal region focuses the problem still closer.

The onset of intussusception is usually dramatic. A robust healthy child will be seized with a paroxysm of abdominal pain. It may scream out at the intensity of the spasm and double up to relieve the distress. The pain undoubtedly is extreme and is probably due to the sudden drag on the mesentery. In a short time the child relaxes and lies pale and shocked, or possibly with cyanotic lips and face.

Emesis is usually early and consists of gastric content, later it will be duodenal content and later still the characteristic vomitus of intestinal obstruction.

The pulse is usually rapid and small. The temperature is normal in the early stages, though later it may rise to 103° or 104°.

The appearance of shock is as a rule apparent even to the casual observer.

Following the initial attack the child may fall asleep, only to be awakened by another paroxysm of abdominal distress. Again, instead of sleeping, it will appear restless, crawling around on the bed, and frequently assuming a posture on the hands and knees, a feature that may have some diagnostic significance in abdominal disorders of children.

The bowels move early. The first movement is fecal, later mucus or blood-tinged mucus. Early rectal examination may disclose blood and mucus on the examining finger before any has passed the anus.

With such a symptom complex diagnosis can usually be made. The palpation of a mass in the abdomen is conclusive, but not always necessary. The abdomen may be soft, flat, and easily palpable or distended and difficult to palpate. A mass, if found early, will usually be felt in the right iliac region. Later it may be anywhere along the course of the colon. Rectal examination may disclose the advancing bowel to the examining finger with a touch perception similar to that of the cervix uterus. Holt states that the mass is

palpable to rectal examination in 50 per cent of the cases. I am rather inclined to believe that it will be found rather late in the majority of cases, although he lists one case where it was felt twelve hours after onset.

In this connection I think a fluoroscopy of the colon with the child under an anesthetic would clear up the doubtful case.

In the adult, intussusception may offer an obscure symptom group. Recurring attacks of abdominal distress accompanied by moderate obstructive symptoms should arouse the suspicion that intussusception may be the cause. In these cases polypi, diverticulitis, and benign neoplasms are usually the cause. Malignancies have a tendency to thicken and stiffen the intestinal wall and are less liable to be the initiating factor. Adult intussusception is frequent enough to be borne in mind.

Treatment: The treatment is surgical. Cases have been known where the invaginated bowel made a pathological anastomosis with the sloughing off and passage of the intussusception from the anus. This is along the surgical curiosity line, like the appendiceal abscess that ruptures into the bowel. Operation offers the maximum hope for the patient. In an early case, however, an attempt at hydrostatic disinvagination may be made by using a thin barium suspension under direct observation on the horizontal fluoroscope. General anesthesia will be necessary. The barium suspension should be placed in a large bottle and forced into the bowel by bulb pressure. Under direct observation the intussusception, if ileocecal or cecal, may be completely disinvaginated. This method, if tried, should be used only in the first eight to twelve hours. In the ileocecal type the restoration of the contour of the caput cecum coli may be difficult by reason of the edema and stiffening of the bowel wall. The method may well be tried in patients who are reluctant to submit to operation.

Operation through a midabdominal incision will give the maximum of exposure and make closure easier. It is advisable to keep the incision out of the upper abdomen as much as possible. A systematic search is better than a blind groping. Keeping the small intestine within the abdomen as much as possible, gently run it through the fingers, and it will bring you to the invaginated mass. Also you may find another intussusception that may need relieving. The spasmodic factor has been introduced into the belly, and secondary intussusception may have taken place.

Finding the mass the attempts at manual reduction should always have a most thorough trial.

It is claimed that it is better to separate adhesions and sew up tears in the bowel's coverings than it is to do a resection. As a rule 82 per cent can be reduced manually. Reduction should be made by milking out the invaginated portion rather than by traction with its consequent shock from the drag on the gut. Usually the intussusception is easily reduced down to the last few inches. Here an edematous portion may make reduction difficult. If the bowel appears in good condition the application of a hot pack for a few minutes followed by gentle tractive and milking efforts will free the last portion. If the condition is ileocecal there is usually a stiffened caput cecum coli and an edematous appendix. The temptation to remove the appendix should be withstood unless it is so definitely damaged as to make removal imperative. The mortality rises about fifteen per cent with coincident appendectomy.

If the invagination is irreducible a resection is necessary. This can be either end-to-end or lateral. The method of sewing intussusceptum and intussusciens together with removal of the invaginated mass through a lateral incision in the distal portion of bowel is frequently advised and would seem to be the least time-consuming and offer the greatest hopes of success. In cases that are resected and that have the distended and shiny bowel of late obstruction, an enterostomy would look like good surgery, although children do not well stand an enterostomy. Enterostomies alone without attempts at reduction or resection have given a mortality of 100 per cent.

Rapidity of operation with the minimum amount done will give the best results. The mortality rises with the amount done as well as with the elapsed time before operation.

In the adult or in cases that are due to some aberrant anatomic factor, such as adhesions, Meckel's diverticulum, or tumors of the intestinal wall, a correction of conditions will be necessary to prevent recurrence.

Granting that we have diagnosed and operated early, what assurance have we that intussusception will not recur? Cohen, of New York, reports recurrence in four out of a series of forty cases. Holt reports recurrence in 6 per cent of a series of 341 cases.

Cohen thinks some effort should be made to prevent recurrence and advises in cases with unusual mobility of the cecum that the ileum be tacked with a few stitches to the cecum, so as to parallel ileum and cecum for a couple of inches.

Recurrence may take place in a patient a few

hours or days following operation and should always be borne in mind.

In summing up I would state that the consensus of opinion is that the sooner a diagnosis is made, the earlier an operation is done, and the less that is done the better the chance of the patient. Along this line I wish to quote some statistics on mortality.

As to time of operation:

1st and 2d day.....	38 per cent
2d and 3d day.....	64 per cent
4th to 6th day.....	72 per cent

As to what was done:

Simple reduction.....	26 per cent
With coincident appendectomy..	40 per cent
Resection and anastomosis.....	63 per cent
Colostomy alone.....	100 per cent

These statistics are quoted for what they are worth. Statistics are often as misleading as an attorney's argument. The fact still remains, however, that intussusception demands early diagnosis and prompt operative correction. Along these lines lies success.

In case-reports I wish to give the findings in two dissimilar cases.

CASE 1.—D. B., a child of three years of age, was brought to the hospital from his home in the country. The mother stated that on account of the difficulty of travel no doctor had been called. She stated that the child had been suffering from vomiting and diarrhea and had been passing blood and mucus in the frequent stools. She gave a history of sudden onset, paroxysms of pain, and periods of apparent relief. It was only when increasing abdominal distension and the plainly apparent grave condition of the child gave warning that she sought medical advice. This was on the fifth day from the onset of the illness.

When I saw the child it appeared very sick. There were marked prostration, a rapid pulse, a rectal temperature of 103° and a distended abdomen. Rectal examination was negative as far as palpating any advanced portion of bowel. Abdominal palpation was negative as far as the ability to feel any mass was concerned. A diagnosis of intestinal obstruction probably due to intussusception was made. Operation was advised against but was done at the urgent request of the parents.

On opening the abdomen a coil of dry, shiny dilated small intestine escaped from the incision. Seeing that any investigation, let alone closure, would be hopeless in the face of this distension, a tube was purse-stringed into this coil of bowel, and after some manipulation the bowel was rid of large quantities of gas.

Down in the right iliac region the mass of the intussusception was found. It had not traveled along the course of the colon, as is usually the case. The transverse colon seems to have fed itself over the cecum and part of the ileum. Evidently a short mesenteric attachment of the cecum had held the mass in the iliac region.

Reduction was possible for only a few inches. The rest of the intussusception was adherent and with gangrenous patches.

A lateral anastomosis of ileum and colon was made. The original enterostomy was placed in the lower angle of the incision after a most difficult closure.

Death followed operation in about six hours.

COMMENT

Probably a better procedure in this case would have been to have united ileum and colon at their mesenteric borders, purse-stringed a tube into each bowel, and brought them out of the lower angle of the incision as a combined ileostomy and colostomy. Such a procedure would have been less time consuming and better surgery in the light of the toxic bowel content.

CASE 2.—M. P., a healthy and robust boy of eighteen months, was taken sick while straining from the effects of an enema. He cried out in sudden pain and then doubled up. The mother thought he was going to have a convulsion, but the paroxysm was soon over. She stated that he was pale and weak following the attack and vomited shortly thereafter. This occurred at ten o'clock in the morning. I was called to see the patient at eleven on account of his having passed a bloody stool. Questioning brought out the fact that he had passed a small amount of mucus first and that later she had found his diaper stained with a mixture of blood and mucus.

Fortunately, this mother is of an intelligent type and did not fly for the castor oil bottle and deluge the patient with a heavy dose of the same.

When first seen the child was sleeping, and his mother stated that he had slept following the initial attack. Examination did not disclose any definite mass in the abdomen, but it did seem to cause the

child some discomfort especially in the epigastrium. He appeared somewhat shocked, and his pulse was rapid and thready.

He was immediately removed to the hospital, and on his journey there passed another mucus and bloody stool. From eleven o'clock to three he vomited several times, the last vomitus being bilious. At three I was able to feel an indefinite mass in the left hypochondrium. Rectal examination was negative. Pulse, 130°; temperature, 99° (rectal); leucocytes, 8,400.

Operation was done at 4 P. M. Right rectus incision. Ileum ribbon-like collapsed. Run through fingers, and an intussusception about two inches in length was found about twelve inches from the ileocecal junction. The ileum followed up to a mass which was found at splenic flexure. This was reduced easily by milking. The caput cecum coli was edematous and stiff; appendix, congested and dark; color of gut soon regained all but edema of caput. Appendix, left alone. Closure was difficult, but was made in simplest possible way and strongly.

Convalescence was uninterrupted and without incident.

CONCLUSIONS

Intussusception is a condition that requires the utmost promptness in diagnosis and treatment. The mortality rises both with elapsed time and with the amount of surgical procedure.

There is more than a strong probability that the greater percentage of cases are due to anatomic aberrations. If such are found they should be corrected if possible at the time of operation.

In the adult the mechanical factor of production is practically always present and must be corrected to prevent recurrence.

Elaborate operative procedures only add to the mortality.

PAIN IN THE NECK AND SHOULDER IN RELATION TO ABDOMINAL PATHOLOGY*

BY LOUIS DUNN, M.D.

MINNEAPOLIS, MINNESOTA

The interpretation of pain in the neck and shoulder, without a local cause in this region, has a distinct anatomic basis. While the manifestation of this symptom is not frequent, yet, when present, a knowledge of the causes producing it is necessary for a proper valuation of it.

To understand these symptoms it is necessary to be familiar with the arrangement of the spinal cord and the origin and the distribution of the phrenic nerve.

The smooth external surface of the spinal cord

offers no suggestion of transverse segments, yet in principle the spinal cord may be looked upon as made up of a series of 31 segments, superimposed one on top of the other, each of which gives origin to an anterior motor and receives the dorsal sensory root fibers, which make up a pair of spinal nerves and constitute a cord segment. This mechanism is spoken of as the *reflex arc*. Reflex activity depends on the integrity of the sensory fibers with their connection to the motor fibers in their particular spinal segment. These spinal segments are connected to adjacent segments by numerous collateral axones. This

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arrangement serves to bring several spinal segments in association in a reflex mechanism and permits one sensory nerve to control more motor nerves than that of its own segment. It also explains a visceral stimulation, when sent to its anatomical segment, which may be referred to that of a segment above or below it.

The cervical plexus consists of superficial and deep branches. The superficial are purely sensory; the deeper branches are largely muscular. The supraclavicular branches arise most frequently from the third and fourth cervical nerves and are distributed by three branches as the suprasternal, supplying nerves to the integument over the inner end of the clavicle and the upper end of the sternum; the supraclavicular supplying the integument over the fore part of the pectoralis major and the mammary gland. The supro-acromial branches cross the upper surface of the trapezius muscle supplying the integument of the upper, outer and back part of the shoulder and extending as far down as the insertion of the deltoid.

The phrenic nerve is an internal muscular branch of the cervical plexus, arising very largely from the fourth cervical, but receiving branches from the third and fifth cervical nerves. It contains some sensory fibers. It passes down the neck, enters the thorax, passes over the apex of the pleura in front of the root of the lung, descending between the lateral aspect of the pericardium and the mediastinal pleura, breaking up into its terminal branches on the thoracic side of the diaphragm. The branches of the phrenic nerve are the pericardial, which is supplied to the pericardium; the pleural branches, two in number, supply the pleura at the apex, one the costal, the other the mediastinal pleura. The terminal branches supply the muscles of the diaphragm.

The neck and shoulder pain is a referred pain and is felt over the areas of the skin supplied by the spinal segment from which the phrenic takes its origin. It is in the area of the sensory distribution of the third, fourth and fifth cervical nerves that the pain is felt, but it is in the area of the fourth cervical that the pain is most frequently experienced. It is sometimes described as a shooting pain down the outside of the arm in the area of distribution of the fifth cervical nerve.

The purpose of the foregoing description is to connect up the shoulder pain with the organs that are supplied by the phrenic nerve. Shoulder pain from pleural and pericardial irritation has

been known clinically as a symptom for many years and is due to the irritation of the branches from the phrenic nerve to the pleura or the pericardium. Phrenic shoulder-pain varies greatly in intensity in different subjects. Evidently this must be so because of the differences in the source and intensity of irritation. Often it has the quality of an ache. It may be very acute and may be the dominating symptom for a short time, as in gastric or duodenal perforation. The discomfort may not be severe enough for the patient to complain of it. Unless it is enquired for by the physician, this symptom may be missed. The situation of the pain may be anywhere in the cutaneous distribution of the third, fourth, and fifth nerves. It is, however, found more frequently in the area supplied by the fourth cervical segment. An experience of this shoulder pain occurred to the author on the removal of his gall-bladder under local anesthesia. When the cystic duct was crushed, a sharp pain was experienced on the right side of the neck just above the middle of the clavicle. This lasted only for a short time, probably thirty seconds. This was not accompanied by pain in the abdomen. Three years ago a young woman was seen with pain on the left side of the neck, which was diagnosed as a referred pain due to a peritoneal lesion of the under side of the diaphragm. The autopsy proved this to be due to an abscess between the diaphragm and the spleen.

It is apparent that any lesion which may cause irritation of the diaphragm or its coverings or of adjacent organs covered by peritoneum supplied by the phrenic nerve may be the exciting cause of shoulder-pain. This symptom may be present and be of diagnostic aid in subdiaphragmatic abscess associated with the liver or the spleen; perforated ulcer of the stomach or duodenum may produce a very intense neck-pain associated with the abdominal pain. Cholecystitis with adjacent peritonitis; splenic infarct and rupture of the spleen; appendicitis, retroperitoneal or with the appendix situated under the liver are conditions which produce the neck or shoulder-pain.

In the *Annals of Surgery* of December, 1925, Willis reports a case of benign tumor of the duodenum, associated with a gall-stone the size of an English walnut, which was impacted in the common duct. This illness began in January, 1924, when the patient suffered from severe, colicky pains in the upper abdomen, radiating to her neck and shoulder. This lasted about twenty-four hours. These attacks were repeated every

month until July and were relieved when she was operated on for the removal of the stones and tumor.

This referred pain in the neck and shoulder must not be confused with the infrascapular pain often felt in gall-stones and duodenal and gastric conditions.

Cope believes he can relate the situation of the shoulder-pain to the particular region of the diaphragm which is irritated and cites some very convincing cases in support of this contention. However, when it is remembered that shoulder-neck pain is a symptom of phrenic irritation and is always accompanied by other symptoms more or less characteristic of the condition that is present, it is a confirmatory symptom of great worth. It is the presence, not the absence, of shoulder-neck pain which is of value.

Dr. Richard A. Kern, of Philadelphia, Penn., narrates in the last number of the *Journal of the A. M. A.*, a most perfect experiment in the production of this neck-pain. The patient consulted the gynecologist because of sterility. Examination disclosed nothing abnormal in the uterus or pelvis. Air was injected under sterile manometric control. The air apparently entered the uterine cavity without obstruction. The amount of air was not measured, but it was about two bulbs full. An hour later when she was about to board a train, she was seized with an intense pain, low in the left chest in the axillary line near the costal margin, and also pain in the left side of the neck. The pain was made much worse by deep breathing. At the same time there began marked cardiac palpitation. She returned to the gynecologist's office, and Dr. Kern was asked to see her. She was in great distress, her face flushed, and her breathing short and jerky. Her heart was rapid and tumultuous, but the pulse was of good quality. The heart's size and sounds were normal but with a pulse-rate of 152. "Pain in the lower part of the chest and the neck was worse on deep breathing and

is not uncommonly seen as a transient phenomenon after the performance of Rubin's test. Therefore it seemed logical to conclude that the patient's discomfort was due to the presence of air under the left diaphragm. This being true, it seemed reasonable to expect relief from pain if the patient were placed in a horizontal position. This was done, and after a couple of deep breaths the patient, to her great surprise, became comfortable. To the surprise of the gynecologist and myself, her radial pulse-rate, which we each were counting, *as well as the rate of the heart*, dropped almost immediately to the upper 70's and remained there. Five minutes later, we asked the patient to sit up, and there was a prompt return of the pain but with a much diminished severity. On lying down the patient again had prompt relief. She remained in this position for some time, the abdomen being massaged to hasten the absorption of the intra-abdominal air. She returned home later, suffering only moderate discomfort." The occurrence of these symptoms, after Rubin's test, is a matter of considerable frequency and illustrates the phenomenon of neck-pain when the abdominal peritoneum, which is supplied by the phrenic nerve, is irritated. The shoulder-pain is usually referred to the same side as the lesion. If the center of the diaphragm or the abdominal lesion is of sufficient extent to include both sides of the diaphragm, pain may be experienced on both sides of the neck. One could hardly call this reflex pain a visceral reflex pain. The phrenic nerve supplies pleura, pericardium, and peritoneum, which cover viscera so extensively that an irritation of either of these membranes overlying the inflamed organ may express itself in a pain referred to the shoulder or the neck. We must also relate the variability and the intensity of the pain to the variability of the irritation and thus account for the graduation of the pain from a dull to one of greater severity.

ALVEOLAR FOCI OF INFECTION AND THEIR CONSERVATIVE SURGICAL TREATMENT

By CHARLES C. MILLER, M.D.

CHICAGO, ILLINOIS

When a patient presents with an obscure physical disorder and there is evidence of chronic infection of one kind or another, after excluding localized organic diseases, in a great many of

these cases, we have no better way of handling them than by making a search for points of focal infection.

When the focal infection theory was first ex-

ploited as the solution of many of our problems, it was enthusiastically received by a great many medical men, and, while we must admit that it has not entirely lived up to our hopes, at the same time there is no better way of handling these chronic obscure cases with certain kinds of symptoms than by putting into effect the plan of searching for points of entrance for bacteria into the system.

The work of radiography was greatly widened by the introduction of this method of handling these cases, and it was soon found that many patients with chronic disorders presented evidences of infection of the alveolar processes. Subsequently a furious epidemic of wholesale tooth extraction raged for several years, but failure to get results by such sacrifices discouraged many diagnosticians, and to-day we do not have them recommending these wholesale extractions as freely as they did a few years ago, but thousands of patients are still surrendering teeth which appear to be normal.

Where radiographs show evidences of bone absorption within the alveolar processes, or of the laying down of lime salts within the bone in excess of what is usually present, these bone changes point definitely to types of infection. They are frequently found in teeth free from cavities which apparently are firmly seated in healthy gums.

Some thirty-five years ago dental surgeons prominent in the profession advocated the drainage of abscesses in the alveolar processes. These operators described a technic whereby the process was opened in the neighborhood of the root apex and the purulent material present cleaned out. If the root apex was found diseased, it was amputated. This operation, of course, at that time, was used in the treatment of frankly infected roots. The patients so treated had sinuses extending through the bone to the tooth root involved. While some operators reported good results and many teeth saved, in many of these cases infection had extended through the alveolar process, and several teeth were infected.

Those teeth closest to the sinus only were treated surgically, and the failure of surgeons at that time to recognize that when pus had burrowed so much as to break through the plate of compact bone making up the surface of the process, it had extended, before doing so, along and involved not just the tooth closest to the sinus but probably several others. Not realizing this, and operating only upon one tooth, and not following the infections along the process, many dental surgeons failed to get the results they ex-

pected, and consequently these operations did not continue to enjoy general favor.

The dental surgeons who do this kind of surgery to-day represent a very small percentage of dentists.

Few men even active in surgical practice realize that the operations of surgical drainage of the process are old and established procedures in dental surgery, and in consultation with dentists, few physicians or surgeons will meet dentists who advocate such operations, but with the advance of the theory of focal infection, and the finding of foci in so many alveolar processes, a new phase is given to this kind of surgery.

The pathologists who point out the minor degree of bone involvement evidenced by rarefaction of the bone in the process at the root apex, or by a laying down of an additional amount of lime salts in this situation, realize that, while the condition is perhaps bacterial, there is, as has been said, a type of bacterial balance. When we open such a process we do not often find free pus.

We may find considerable thickening of the pericementum of the toothroot; we may find such a condition beyond the apex of the tooth as to indicate striking physical structural changes, but we have nothing there that particularly contraindicates conservative treatment. When the dentist frowns on such plans and says "Out with infected teeth," he does so because he is accustomed to dealing with teeth which have frankly abscessed.

Now, the severe abscess which involves a root apex, and which extends rapidly through the cancellous bone from one tooth to another, of course, is a different condition from those almost quiet lesions which are found only by the *x*-ray examination.

Oftentimes teeth are valuable adjuncts to the economy. If we have evidences of chronic constitutional disease which appears to us to be due to some focus of infection and we have that evidence of infection at the apex of one or several teeth, there is of course a good reason to attempt to eliminate that point of infection, but it is not really necessary, in order to do this, to extract a sound, solidly imbedded, apparently healthy tooth, as is so often done.

Access to the apex of a tooth is very easy indeed. An operation taking off the thin plate of compact bone of the alveolar process and exposing the root apex of one or more teeth is a very minor surgical procedure.

If the general hygienic state of the mouth is good and if active antiseptic measures are taken

during operation, the opening of the process will very, very seldom, indeed, do any harm. In nearly all cases, after the outer plate of bone is removed, if any tissues showing evidence of physical change, either of softening or of hardening are removed, the cavity treated with antiseptics, and then the gum tissues closed over the cavity, primary union nearly always occurs.

If a root apex gives evidence of infection, and there is a partial destruction of it, or a marked thickening of the pericementum, this root apex can be amputated with safety. Cutting off a root apex, curetting out soft bone, leaves a pocket in the depth of the process, but such pockets fill with blood, and we have a connective-tissue deposit forming rapidly where the tooth apex has been.

Now, the healthy tooth, it is true, has a natural fibrous cushion upon which it rests. Connective tissue deposited in the cavity formed by the evisceration of diseased tissues, may go on to complete ossification, so that, instead of having the tooth resting in a normal fibrous bed, it may actually be ankylosed into the process, but such a condition is not particularly objectionable, provided the patient is warned not to abuse that tooth.

Such a tooth should not suffer undue trauma in occlusion; in other words, its occlusal surfaces should be studied, and, if it impinges too strongly against its antagonist opposite the surface which does so should be dressed down. The possessor of such a tooth should be warned not to use it for nut cracking, but, if it is used in ordinary mastication, it may last indefinitely.

To do these operations local injections of procaine are adequate, 1 or 2 per cent solution injected down against the bone, and then infiltrating the gum tissues, renders the operation entirely painless. The process should be exposed, and the outer plate removed. This is easily accomplished with a small trephine. After the trephine opening it is a simple matter to use a small sharp bone curette and to scrape out any diseased tissues. If the tooth root shows evidence of erosion it is carefully cut off and dressed smooth. When all diseased tissue is removed the soft parts are brought together over the opening in the process with very fine catgut. I use 000 iodized gut, and stitch the gum tissues snugly together, making, as we might say, a water-tight union.

The cavity in the bone fills with blood and it is our desire that organization occur through extension of connective-tissue trabeculae through the blood-clot. Nearly all these cases heal by primary union.

In the event that the cavity suppurates the tooth is not particularly endangered as we have a free outlet for the pus.

Careful syringing with dilute antiseptics, such as dilute iodine or hypochlorite solution, soon causes resolution in the few cases in which primary healing does not occur.

When teeth are firm in the gums and the gums appear healthy practically all such teeth are saved and the evidences of infection overcome by this operation.

To extract such teeth is a waste of good anatomical structures; at least, that is my opinion.

AMERICA THE HOME OF THE FADDISTS

Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, has delivered a lecture on the general subject of "faddists" before many medical societies, and brief extracts from his talk have whetted the appetite of many doctors to receive a taste of Dr. Fishbein's keen satire.

The *Pioneer Press*, of St. Paul, made pretty full extracts from the paper as given before the Minnesota Medical Association last week, and we take the liberty of copying the same for the "pleasure" of our readers:

"Of all the nations of the world, the United States is most afflicted by its healers. Besides those holding the degree of M.D., a host of queer practitioners

pervades the medical field. They have conferred on themselves strange combinations of letters, indicating the peculiar systems of healing which a somewhat lax system of legislation and law enforcement permits them to practice on an unwary public. One of the marks of the charlatan is the use in advertising of such an alphabetic appendage.

"Cult followers cult and quackery succeeds quackery with amazing rapidity. Many cults seem to be definitely confined to small districts and fail to come to light even in a careful investigation. Then, too, a single commercially successful cult like chiropractic—itsself the child of osteopathy and magnetic healing—gives birth to many offshoots which again propagate more bizarre offspring and unusual hybrids. A complete picture of the farcical scene would require endless research. The United States unquestionably bears the palm in every class so far as healing cults are concerned.

Definition of a Cult

"A cult is 'excessive devotion to some person, idea or thing, especially when pursued as an intellectual fad by a body of enthusiastic, self-constituted admirers.' As applied particularly to medicine, a 'sectarian' is one who in his practice follows a principle, based on the authority of its promulgator to the exclusion of demonstration and experience. It must have a leader. These are usually men of powerful personality, intensely egocentric, frequently young and handsome, but often merely shrewd. Sometimes they are self-deluded, but more often they are consciously deluding. Likely as not they feel themselves and announce themselves as divinely inspired.

"The scientific medicine of today is based on the discoveries made in the fundamental sciences. It holds to no single theory as to the course of disease and it does not insist correspondingly that the successful treatment of disease depends on the use of any single method of manipulation or administration. The cults on the other hand might be classified easily into mental healing cults, mechanical cults, electric cults, nature cults and similar divisions, since they adhere definitely to such single devices. Other cults might be classed merely as non-medical, since they deprecate the use of medicaments. They are founded, moreover, on peculiar fallacies with relation to the anatomy of the body, on misconceptions of certain physiologic functions, or on exaggeration of the relative importance of certain parts of the body in maintaining it in a constant state of health.

Avoid Fundamental Sciences

"The cults avoid the fundamental sciences as far as possible. Rather than attempt to correlate the fallacies on which the cults are based with established knowledge, cultist leaders are inclined to deny flatly the facts that have been demonstrated. Of germs and disease they take little cognizance, referring constantly to the 'germ theory.' Many cultist leaders denounce the eating of meat because of some weird notions of body chemistry. Others employ apparatus of such intricacies as would bring a flush of envy to the cheek of Rube Goldberg; mechanically such machinery excites the ridicule of the humblest tyro in the science of physics. The complacency with which cultist leaders dispose of the fundamental facts of science in promoting their views may be taken as sound evidence of their essential eccentricities."

The address of Dr. Fishbein concluded with a rapid delineation of the characteristics of many medical cults, including astrology, manipulation, electric methods, faith healing and nature cures.

Concerning faith healing, he said: "Records may be found in all religions from the earliest times of remarkable cures resulting from faith, grace, inspiration, prayer, conversion or what not. Obviously these do not concern organic disease that has been subjected to scientific diagnosis.

"The ancient Greek, Hebrew and Egyptian physicians used faith healing methods as a part of their combinations of priesthood and physicianship. The Druid priests and Indian medicine men were thoroughly conversant with the powers of suggestion. Messmer and animal magnetism yielded the host of faith healing cults which obtrude themselves on us today.

Healings Put to Test

"What happens when the faith healing methods are put to the crucial test of followup methods such as are now employed by large medical clinics to test the results of new methods? In May, 1923, Evangelistic meetings with faith healing were held in Vancouver. Later the General Ministerial Association of Vancouver, appointed a committee of ministers, doctors, university professors and one lawyer to look into the end results of the alleged cures. The Evangelists refused to co-operate but the committee succeeded, nevertheless, in obtaining the names of 350 persons who were presumably cured by his methods. The diseases included cancer, pyorrhea, epilepsy, bronchitis, neurasthenia, idiocy and 55 others. Of all the patients, only five were so benefited that they might be called cures at the end of six months. Thirty-eight patients showed general improvement, but 212 declared cured after anointing were found unchanged and 17 were distinctly worse. Thirty-nine of the cured patients were dead after six months.

"Five of the persons anointed and four members of the families of anointed persons were found in institutions for the insane. Of the five cases admittedly cured all were in the group classified by sound diagnosticians as nervous or mental diseases."

Medicine and Newspapers

H. R. Galt, managing editor of the Pioneer Press and Dispatch in a paper on "The Medical Profession and the Press," explained how the newspapers turn to other professions for enlightenment on scientific subjects, "but when they go to the physician to ascertain, for example, whether there is any sound scientific basis for the theory that cancer is caused by a germ, it finds itself so frequently hedged about with provisos and conditions as to make the effort well nigh useless.

"I have reference," he said, "to that canon of medicine which frowns on professional advertising. This has apparently been construed to forbid not merely the insertion of a business card in the newspaper, but any newspaper reference to a particular physician.

Difficult to Reconcile

"Frankly, the press does not understand how a great profession dedicated to the service of suffering humanity, can reconcile this rôle with one in which private business rivalry apparently plays so important a part. It finds the problem the more incomprehensible since medicine has never hesitated to urge upon the press its duties to the public, nor in this connection, to suggest the reform of its advertising business.

"The average newspaperman tends to think that a rule of professional conduct which sometimes appears to sacrifice the public interest to the private business of the physician is curiously out of harmony, both with the realities of life and with the rôle of preceptor."

Mr. Galt said it would never be possible, so long as the question of health remains one of the most interesting and important of all human questions, for the practising physician to avoid contact with his local papers, "and it ought to be possible for him to get along with them with a minimum friction and a maximum of usefulness to his community."

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The Hennepin County Medical Society
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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THE RELATION OF THE PUBLIC TO THE MEDICAL PROFESSION

It is a very difficult thing to explain to the people, not only those in authority, but those of the so-called middle classes, to which most of us belong, as well as the people of lower grades, why the doctor is continuously trying to do something to improve the condition of the public health. Every time a doctor suggests a measure that looks as if it might be of some public benefit he is assailed because it is something that is going to bring him more monetary returns, that is to say, from the vulgar side, his assailants think the doctor is out for graft. In the case of some, and a large class, too, it is impossible to make them comprehend that the majority of medical men are working for the benefit of the people. As a rule, and a general rule, too, the doctors are an unselfish lot. They do much, and they do it willingly, to relieve the sick and suffering, and yet they are not appreciated as they should be, nor do people comprehend what the real physician is trying to do for them. The result is indifference, distrust, and complaint against the medical profession. The cults, of course, take advantage of this difference of opinion between the public and the doctor, and they unhesitatingly make some very rash promises about what they are able to do. They do this, too, because they are able to collect their fees in advance and it

does not make any difference what they tell their patients, for these patients usually accept it blindly, when, as a matter of fact, the opinion of the cultist is not based upon a proper physical examination of the patient. It is often rather exasperating to have a patient come in and tell a doctor that he has been to such and such a healer and that the cause of his trouble has been discovered and removed, and hence he declines to pay the doctor's bill, but has paid promptly the cultist's bill.

For instance, to give one or two illustrations of the ignorance of the public: At the time diphtheria antitoxin was introduced, a man in the southern part of Minnesota was called to see a Polish child, and as he entered the house he knew that something was very radically wrong, for he heard difficult and rather stentorian breathing. He found the child was suffering from advanced diphtheria, and he told the father the child would die unless something radical was done; that diphtheria antitoxin was new, but highly recommended, and he would like to try it. The father gave his consent, and the doctor drove back to town, routed the druggist out of bed, and purchased out of his own pocket ten dollars' worth of antitoxin. He went back and gave the child an injection, called the following day and gave a second injection, and the child was then convalescing. Time went by, the child had fully recovered, and the doctor sent his bill, but no attention was paid to it. A few months later the father of the child came into the office and said: "Doctor, I am not going to pay that bill. You made a mistake in the diagnosis, for I know a child with diphtheria cannot get well in two or three days under any kind of treatment." The doctor brought out his report from the State Board of Health confirming his diagnosis, but the man refused to pay his bill. The doctor had previously paid for an experience—ten dollars for the serum.

In another case a man in an adjoining town sent for a physician, who went down on the train at two o'clock and found a child who was cyanotic, breathing with the greatest difficulty and apparently in a dying condition. The temperature of the child was 111°. The doctor labored, by the use of cold water enemas, friction, and other commonly used means, and before he left in the afternoon the temperature had dropped to 102°, and the child was in an apparently normal condition. He paid a visit the second day, and the child was convalescent. He sent the man a bill, and a few months later the man came in and declined to pay it because he

said he was a Doweite; that he had telegraphed Dr. Dowie at 2:30 in the afternoon while the physician was on his way down there, and the child began to improve at 3:30, and he knew that Dr. Dowie had begun his treatment and that he could not conscientiously pay the doctor's bill because he had done nothing, and Dr. Dowie had done it all. It must have been with great pleasure that the doctor forcibly ejected the man from his office and told him to stay out. Both of these men were men of ordinary sense and judgment, but when it came to a medical problem they had no judgment whatever.

Those of us who have served long on the hospital staffs of the city will remember that way back, many years (thirty-five perhaps), the City Hospital was instituted by Dr. James H. Dunn, who was at that time City Physician. The hospital was a small house on the corner of Eleventh Avenue and Eighth Street, South, capable of holding a few patients. Dr. Dunn secured the services of his friends, who constituted the first staff of the City Hospital. It grew, as it must have grown, by applications from the poor people who needed assistance and skilled care. It was moved to another building, a residence. Finally a hospital was built, and out of that small beginning has developed the General Hospital of Minneapolis. Doubtless the same procedures were instituted in the foundation of the Ancker Hospital, in its early days, in St. Paul. Do the public know what the doctors did for them at that time? It would probably not be a wild assertion to say that not less than 250 doctors in the city of Minneapolis and a similar number, in proportion, in St. Paul have given their services in the various hospitals for the care of the poor sick which, if computed in hours, or days, or months, or years, would be almost unbelievable.

Some man who spoke at one of the noon-day groups the other day, a judge of the District Court who had served on the Welfare Board, said that he knew what it meant for a doctor to give up his time, his services, and his medical and surgical skill to patients in the General Hospital and its allied hospitals; that they spent hours each day uncomplainingly, willingly, to do their duty. And does the public care anything about it? Does the public appreciate it? Can they understand it? Will they ever understand what the medical profession, the real medical profession, has done for their benefit and for the health of the community? Typhoid fever is practically stamped out. Why? Because public-health measures were so improved by the association of men interested in public-health work

that it is gone. Just so will most of the communicable and infectious diseases disappear if the public will co-operate with the medical profession. But the cults, the fanatics, and the religionists who disbelieve this sort of thing will be a constant menace to the public health. Yet the same doctors, physicians, surgeons, and specialists in all branches go on day after day doing their daily work, contributing to the saving of life and health, without remuneration, without praise, without acknowledgment, and without knowledge on the part of the public.

THE MINNESOTA STATE MEDICAL ASSOCIATION MEETING

The fifty-eighth annual session of the Minnesota State Medical Association was held in St. Paul at the Masonic Temple on the 17th, 18th, and 19th of May, and the registration was good.

The program was a very choice one; and carefully correlated effort on the part of the program committee was evidenced by the result. The joint meeting, which has become, we hope, a permanent feature of the Association, began at 8:30 A. M. Tuesday, and was introduced by Dr. Horace Newhart, who demonstrated the "Modern Methods of Testing the Acuity of Hearing," in which he used several types of audiometers. This is something that has been tried out in the public schools and found to be extremely reliable, and the children can be tested at a very rapid rate, something like a hundred in an hour, and it is to be hoped that this will become a permanent feature in all the public schools of the state. Testing out the hearing of children and making it a matter of record will do much toward their future happiness. Other papers of Tuesday forenoon had to do with "Cancer of the Larynx," "Acute Laryngeal Obstruction," and "Surgical Treatment of Pancreatitis." Following this was a symposium on "Infantile Paralysis," from a mechanical, surgical picture-point of view, by the pathology and the symptom group, and the treatment by poliomyelitis antistreptococcic serum. The surgical treatment and the serum treatment were both introduced by men from Rochester.

An intermission of fifteen minutes was given between the topics so that the men could go forward and see the pathological demonstrations and exhibits.

Following this there were a few articles on neurological and psychiatric subjects.

In the afternoon of the same day the subject covered "Human Intestinal Protozoa" and "Pericarditis." Following this a symposium on "Car-

diovascular Renal Disease" was given. A discussion of arterial hypertension was introduced by Dr. C. P. Emerson, Dean of the Indiana University Medical College at Indianapolis,—a very thoughtful and impressive man who talked with force, presenting ideas that were instructive and understandable. We heard him speak again in the evening at the banquet, and he talked then upon our profession; again, he was not only instructive but entertaining. Later, during the afternoon of the Tuesday program, surgical matters were presented concerning the treatment of "Periduodenitis," by Dr. E. P. Quain, of Bismarck, N. D., one of the visitors; "Diagonal End-to-Side Anaastomosis," "Treatment of Some Injuries and Infections of the Hand," "Hydrocephalus, Surgical Treatment," and "Twelve Cases of Trichinosis," the last named probably a record of the outburst of this disease in central Minnesota.

The annual banquet, which was given on Tuesday evening at the St. Paul Hotel, was admirably placed and the room contained approximately 350 men. The dinner was good, as it always is at the St. Paul Hotel, and the speeches were given in line with what is usually found at doctors' banquets,—a bit long drawn out, some of them uninteresting, and others of decided value. Governor Christianson and Mayor Nelson (St. Paul), who were to speak were unavoidably occupied elsewhere,—one of them talking and the other in bed. Also the President of the University of Minnesota who was scheduled for a speech was unable to be present. But their absence was made up for by the presence of other guests, among them Attorney-General Hilton, who was amusing and entertaining.

The Minnesota State Medical Association was amply represented by the past president, Dr. W. L. Burnap, and the president, Dr. Herman M. Johnson. One had a message for the parting of the ways and the other some new things for the Association. Dr. Charles P. Emerson, of Indianapolis, was the real speaker of the evening, as he talked upon a subject that was very near to the hearts of the men who were there, and those things are always remembered and carried away. Dr. Charles H. Mayo talked very learnedly on the "Energy of Light," and doubtless he added to the illumination of the ball room or banquet hall. It is quite evident we physicians must take up more outside subjects, or we shall be swamped with a lack of knowledge.

Wednesday was a busy day, and all sorts of things were presented by local and visiting men.

Among the topics was the "Relation of Retroperitoneal Fat to Abdominal Hernia," by Dr. C. A. Roeder, of the University of Nebraska, at Omaha.

The rest of the program was made up of reports and topics from local state men.

The installation of officers occurred in the middle of the Wednesday morning program and was simply a part of the program. Most of us had met President Johnson, and most of us knew the president-elect, Dr. W. F. Braasch, of Rochester. The moment was a happy one and everyone welcomed to the echo.

One rather important talk was given by Dr. C. W. Spears, the football man, who told about the treatment of athletic injuries. In the afternoon there was a symposium on obstetrics and the subject of gastric disease in the infant abdomen, and urologic diagnosis in general surgery; "Some Abnormal Findings in Diabetes;" and "Blindness Associated with Carbon Monoxid Poisoning,"—a very important paper. The program was terminated by a paper on "Physiotherapy in Hospital and Group Practice."

The Women's Auxiliary of the Minnesota State Medical Association did wonderful work this year, far better than has been done before. The organization has been perfected, and it will probably be an example for others in the years to follow. Evidently the women had a good time. They were entertained at various places.

The Ramsey County Medical Society certainly did much for the entertainment of the entire Association by giving a vaudeville and dance at the Masonic Temple in the evening, on Wednesday. They said it was to be good, and it was good.

One must not forget, however, to report on the Monday evening meeting, especially the address of Dr. Fishbein. On another page will be found passages taken from the addresses of Dr. Fishbein extracted from the *St. Paul Pioneer Press*.

The editor came very nearly forgetting the fact that the Delegates met, and he apologizes for his omission of that, if apology is necessary. Many very important reports were brought forward. The Editing and Publishing Department of Minnesota Medicine is apparently a thousand dollars to the good this year.

Dr. Olga Hansen, the necrologist, reported on the deaths of the men of the Association this year. The Committee on Hospitals and Education, through Dr. N. O. Pearce, brought in a very welcome report which will do much to stimulate others to follow the suggestions outlined for them. Dr. F. L. Adair reported, for the Com-

mittee, his plan to foster better obstetrics. This report will have to be studied and will probably be laid over until some future time.

The Radio Committee gave a report through Dr. E. H. Norris. He told of the number of medical talks that were broadcasted, and one which was broadcasted but not reported on, or at least not recommended,—at any rate, the Committee had not been consulted. The editorial mentions no names, but the report was quite entertaining.

The Committee on Public Policy and Legislation, through its chairman, Dr. Charles Bolsta, gave us much to think about and something that will be of value for future reference. Dr. J. C. Litzenberg and Dr. John Rothrock gave the reports on the meeting of the A. M. A. in 1925 and 1926, in which both suggested that delegates from this State Association to the House of Delegates of the American Medical Association should be continued in service for a sufficient time to familiarize themselves with the work in prospect.

Then followed the introduction of a resolution concerning the University Medical School, a copy of which follows:

Resolution Passed in the House of Delegates of the Minnesota State Medical Association

"BE IT RESOLVED that the Minnesota State Medical Association disapproves of the general policy of admitting pay-patients to the University Hospital.

"BE IT FURTHER RESOLVED that a committee of seven including the President of the Association, Dr. H. M. Johnson, who shall be an active member of this committee, be appointed by the President of the Association, and after having fully informed themselves concerning the problems affecting the Medical School, arrange a conference between this committee of the Association, the President of the University of Minnesota, and representatives of the Board of Regents of the University, to consider what the future policy of the University shall be concerning these problems and other problems which may present themselves concerning the medical school and the medical profession.

"BE IT FURTHER RESOLVED that the Minnesota State Medical Association reasserts its stand previously taken against the socialization of medicine and state medicine.

"BE IT FURTHER RESOLVED that the members of the Minnesota State Medical Association do hereby express their willingness to co-operate with the Board of Regents of the State University of Minnesota and others in authority to the end that an abundance of suitable clinical material, secured entirely from the ranks of the worthy poor, may be available for medical instruction, and pledge their support in securing public and private funds for this purpose.

"BE IT FURTHER RESOLVED that a copy of these resolutions be spread upon the minutes of this Association, and copies sent to the President of the University of Minnesota and to the President of the Board of Regents."

This resolution was referred to a special committee and its original form was very much altered, that is, the resolution which was introduced by the Hennepin County Medical Society at its own meeting was so worded as to be acceptable to the majority of the committee and doubtless will be acceptable to most of the state, as it provides means of communication, inquiry, and conference between a committee of the State Medical Association and a committee from the Board of Regents. The fundamental features of the original motion were incorporated, but perhaps the language was a little less drastic. Also, the paragraph referring to the celebrated radio speech and the disapproval of the policies broadcast regarding the Medical School was replaced by a more moderate one.

THE JOURNAL-LANCET wishes to commend the St. Paul men for their arrangement of everything necessary for the comfort and convenience of the visitors to the State Association. The various committees in St. Paul are to be complimented on the successful conduct of a state meeting. More than a dozen committees were in evidence and always active and ready for consultation and with information.

The next meeting of the State Association will be held in Duluth some time in the spring of 1927. Duluth has always been a very active and entertaining place, and if they emulate the effort of St. Paul they certainly will have a great deal to do. The following officers were elected: President, Dr. W. F. Braasch, Rochester; vice-president, Dr. H. B. Aitken, LeSueur Center; secretary, Dr. E. A. Meyerding, St. Paul; treasurer, Dr. Earle R. Hare, Minneapolis.

THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

The South Dakota State Medical Association held its 1926 annual meeting at Aberdeen on May 19 and 20, 1926.

The sessions were well attended. Total registration was 183. The material for the clinics was ample and was presented in a masterly manner by the clinicians. The session of the House of Delegates and Board of Councilors had an unusual amount of material for consideration. A resolution was adopted to defeat the pending legislation in Washington pertaining to the Harrison Narcotic Act, Bill No. S. 4085. The following officers were elected:

T. F. Riggs, M.D., President.....	Pierre, S. D.
S. M. Hohf, M.D., 1st Vice-Pres.....	Yankton, S. D.
N. K. Hopkins, M.D., 2nd Vice-Pres.....	Arlington, S. D.
L. N. Grosvenor, M.D., 3rd Vice-Pres.....	Huron, S. D.
J. F. D. Cook, M.D., Secy.-Treas.....	Langford, S. D.

COUNCILORS

	District	Time Expires	Address
R. D. Alway, M. D.	First	1929	Aberdeen
H. W. Sherwood, M.D.	Second	1929	Doland
J. R. Westaby, M.D.	Third	1927	Madison
A. A. McLaurin, M.D.	Fourth	1929	Pierre
O. R. Wright, M.D.	Fifth	1929	Huron
Clerk			
Frederick Treon, M.D.	Sixth	1927	Chamberlain
Chairman			
R. W. Mullen, M.D.	Seventh	1927	Sioux Falls
J. P. Isaac, M.D.	Eighth	1929	Freeman
F. W. Minty, M.D.	Ninth	1929	Rapid City
J. C. Waterman, M.D.	Tenth	1928	Burke
A. E. Bostrom, M.D.	Eleventh	1928	DeSmet
P. D. Peabody, M. D.	Twelfth	1927	Webster

The Aberdeen District Medical Society entertained the visiting physicians and their wives in the usual very hospitable manner. The State Medical Association extended to the Aberdeen District Medical Society a vote of thanks.

—J. F. D. C.

BOOK NOTICES

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month). Volume IX, Number 1, November, 1925 (New York Number). Per clinic year (July, 1925 to May, 1926). Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

This book is issued every two months. It presents a group of very interesting articles by well-known men. The articles cover the entire field of medicine and are written in such a form that they are easy to read. Many of them have a number of case reports. In this volume the following articles appear:

"Interpretation of the Sugar Tolerance Test," by Dr. H. O. Mosenthal.

"Digitalis: Hypersusceptibility and Dosage," by Dr. W. A. Bastedo.

"Infectious Mononucleosis in Childhood," by Drs. M. H. Bass and H. Herman.

"Clinical Use of Liver Function Tests," by Dr. H. F. Shattuck.

"Quinidin, the Use of," by Dr. R. L. Levy.

"Bulimia," by Dr. B. B. Crohn.

"Diagnosis and Treatment of the Commoner Types of Ringworm," by Dr. A. B. Cannon.

"Hyperthyroidism with Goiter," by Dr. A. S. Blumgarten.

"Sclerosis of the Pulmonary Artery and Its Branches," by Dr. H. R. Miller.

"Syphilis of the Stomach," by Dr. J. M. Marcus.

"The Influence of Focal Infections in the Nose, Throat, and Sinuses," by Dr. C. Gluck.

"Present Status of X-ray Diagnosis of Gastric and Duodenal Ulcer," by Drs. I. W. Held and I. Gray.

"Transitory Blindness after Chickenpox."

"Eczema in Infancy Due to Protein Sensitization."

"Pulmonary Tuberculosis in Early Infancy Simulating Bronchial Asthma," by Dr. B. Ratner.

"Diabetes Mellitus in Relation to Gastro-Intestinal Disease," by Dr. S. Fiske.

"Cardiospasm," by Dr. J. M. Marcus.

This book is well worth reading and gives to the busy practitioner a short form of postgraduate work. It presents the best of recent discoveries in the field of medicine and the best in recent procedures of treatment.

—A. N. BESSESSEN, JR., M.D.

SIMPLIFIED NURSING. By Florence Dakin, R.N., Inspector of Schools of Nursing, State of New Jersey. Cloth; price, \$3; pp. 499, with 77 illustrations. Philadelphia: J. B. Lippincott Company, 1925.

Simplified Nursing is a book suitable for a textbook or a reference book not only for schools of nursing but for the home.

The writer has divided the book into three chapters. Chapter I contains 10 lessons on "Routine Work" necessary in the care of the sick, such as the ventilation and general care of the sick-room, beds and bed making, cleansing baths, care of the mouth, etc. Chapter II contains 19 lessons on "General Nursing Methods," which takes up more advanced nursing care; the taking of temperature, pulse, respiration; the giving of curative baths and packs; charting; giving of medicines, and other points. Chapter III contains 9 lessons on "Special Nursing Methods," such as surgical technic, common communicable diseases, emergencies.

The author is particularly qualified for treating this subject, as she has had several years of nursing experience and is now inspector of schools of nursing in the State of New Jersey.

Miss Dakin in the handling of each lesson gives the underlying principles essential for the nurse to know before she takes up the procedure of a given method. This gives the nurse an intelligent understanding of what she is doing and it also adds interest to the simplest nursing task.

One thing that is of distinct value in the way Miss Dakin handles her subject matter in the third chapter is the beginning of each lesson with a few questions and answers concerning the topic to be studied. It sets the person to thinking; and for one who has had lectures on bacteriology or the other subjects, it serves as a review, and the nursing method is more quickly and intelligently understood.

This book is written in a style that is very easily grasped; its language is simple; and its print is clear.

—ESTHER M. ANDERSON, R.N.

CORRESPONDENCE

TO THE EDITOR:

We have protested S. 4085, a bill designed to strengthen the Harrison Narcotic Act in the following letter to Hon. Calvin Coolidge, Committee on Ways and Means, Committee on Finance of the U. S. Senate, Secretary of the Treasury, Hon. William Williamson, Hon. W. H. McMaster, and Hon. Peter Norbeck.

"Physicians yield to no class of men greater in-

terest in the suppression of the narcotic evil. However, we do not understand why the members of an indispensable and honorable profession must be singled out and harassed by questionable laws and persecuted by political appointees in the enforcement of such laws.

"For the following reasons we desire to protest S. 4085 which was introduced in Congress April 24, at the instance of the Treasury Department.

1. It apparently appoints the Collector of Internal Revenue the accuser if he suspects a physician of drug addiction, the judge as to whether or not such accusation is well founded and leaves to him the right to exact punishment if he sees fit to convict. Thus making the collector accuser, jury and judge.
2. It appoints the pharmacists the judges of physicians' professional acts.
3. It adds to the burdens of busy men by compelling them to keep records of single doses of narcotics.
4. It attempts to prescribe the method of treating addicts.
5. It requires physicians to keep records of the purchase as well as the dispensing of drugs which do not fall within the control of the Harrison Act.
6. It attempts to usurp the right of each state to regulate the practice of medicine within its borders.
7. No satisfactory proof has ever been brought forward that the Harrison Narcotic Act has been successful in regulating or lessening the habitual use of narcotics.

"We refer you to the article "Strengthening the Harrison Narcotic Act" on page No. 1473 of the May 8, 1926, issue of the *Journal of the American Medical Association*. As members of the association the criticisms of the proposed legislation it contains are ours."

In a communication from Senator Norbeck, received this morning, he states that our protest is the first that he has received. We are wondering if you will take up the matter in the next issue of THE JOURNAL-LANCET in order that the doctors who receive our journal may be aroused to fight this proposed legislation?

Yours truly,

C. F. MORSMAN, M.D.

The Hot Springs, Clinic.

Hot Springs, S. D., May 20, 1926.

MISCELLANY

FRANCIS REUBIN WOODARD IN MEMORIAM*

Francis Reubin Woodard was born in Madison, Ohio, July 15, 1848. He came to Rochester, Minnesota, at the age of 10, and was a pharmacist in

*Read at the meeting of the Hennepin County Medical Society, May 3, 1926.

his father's drug-store there before studying medicine.

He attended the Universities of Minnesota and Michigan, and later went to Rush Medical College from which he graduated in 1879. Following this he took a course of clinical study in the wards of the Cook County Hospital, Chicago, and then began practice in Claremont, Minnesota, where he stayed until 1881.

Dr. Woodard carried on an active practice as a general practitioner and surgeon from 1881 to the time of his death. He was associated at one time with Dr. J. Warren Little and later with Dr. Wm. H. Newhall. He served on the surgical staff of the Asbury Hospital, City Hospital, and Swedish Hospital at different periods. He was a member of the City Board of Charities and Correction from 1886 to 1900 and president of the Board for many years. He was a member of the county, state, and American medical societies. He joined the Minnesota State Medical Association in 1880, when Alex J. Stone was president. Dr. W. W. Mayo, father of William and Charles Mayo, was on the committee which examined his credentials.

Dr. Woodard was a member of the Athletic Club, the Masonic Lodge, and Park Avenue Congregational Church.

Dr. Woodard was actively engaged in practice up until about three months ago when he went to Florida where he stayed until his death which occurred at St. Augustine on March 29, 1926, at the age of 78. He had completed forty-seven years of practice, including hospital and public welfare work, forty-five of which had been spent in Minneapolis.

THE DOCTOR'S SACRIFICE AS ONE LAY NEWSPAPER SEES IT

The Devils Lake (N. D.) *Journal* of March 15, 1926, makes some very sensible comments—and does so editorially, as if not afraid to take a glimpse at the unpopular side of a grave public question. *The Journal* says:

"Uplift" efforts in the realm of health are a fine thing for the public, but rather hard on the physician, in the opinion of Dr. L. L. Bigelow, who aired his views recently in the *International Journal of Surgery*.

Ever-growing demands on the service of physicians for charity work are unfair to the profession economically, he says. It takes seven to ten years and \$10,000 of somebody's money to educate the doctor for his life work. Then his domain is continually encroached on by quacks and fakirs on one hand, and by "untrained professional uplifters" on the other. The latter insist on his giving his services for nothing to people who don't need such help, and who would be a lot better off morally and spiritually without it.

Free service pauperizes them, says Dr. Bigelow, when they ought to be learning to pay for what they get from the medical profession, on a self-respecting basis, as they pay their lawyers or grocers or butchers or landlords.

There is a good deal to this complaint. Every sick person must have medical care; but why make him serve the poor so much at his own expense? Physicians in general are rather badly exploited.

It is the exceptional M. D. who is adequately paid for the services he renders. And when he does earn a proper living, he probably has to do it by overcharging conscientious patients to make up for the deadbeats who could afford to pay him and don't.

NEWS ITEMS

Dr. Walter L. Taft, of Minneapolis, will be a candidate for the office of city coroner.

Dr. F. H. Rollins, of St. Charles, is a candidate for the State senate from that district.

The Minnesota State Medical Association will hold its next annual (1927) meeting in Duluth.

Dr. C. E. Lum, of Duluth, was married last week to Miss Margaret Dunbar, also of Duluth.

Dr. F. A. Dunsmoor, of Minneapolis, who has been traveling in Europe since October, has returned to the city.

The Northwestern Minnesota Medical Association will meet in Crookston on August 9 and 10.

Dr. Charles Scott Donaldson, of Minneapolis, was married last week to Miss Catherine Ritchie, also of Minneapolis.

Dr. H. A. Owenson, who has been in Los Angeles, Calif., for some months, has resumed his practice in Grace City, N. D.

Dr. W. H. Costello, late of Calumet, was married last month to Miss Alice Morris, of Grand Rapids, and has moved to Randolph, Wis.

Dr. Thomas F. Ballard, director of the Yankton (S. D.) County Health Department, has become the City Health Officer at Aberdeen, S. D.

The people of Ambrose, N. D., have decided to build a hospital at that place, and enough money has been pledged to go on with the work.

Dr. Herman J. Just, a 1924 graduate of the University of Minnesota, who has practiced a short time at Lamberton, has located at Lafayette.

Dr. W. B. Scott, of Ray, N. D., has been appointed Supt. of the Board of Health for Williams County to succeed the late Dr. Windell, of Williston.

Dr. Albert Sherrill, of Baker, Mont., has decided to return to South Dakota, where he formerly practiced, and he will locate in Belle Fourche, S. D.

The new addition to Nopeming (St. Louis County) State Tuberculosis Hospital was opened

on Hospital Day (May 12), and many visitors inspected the new addition.

Dr. H. O. Altnow, formerly of Mandan, N. D., and now of Minneapolis, was made an honorary member of the Sixth District (North Dakota) Medical Society at its April meeting.

Dr. W. A. Germain, of Sioux Falls, S. D., who left New York on January 1, for a trip around the world, reached home on May 11. Dr. Germain was accompanied by his daughter.

The South Haven Hospital has been opened by Dr. A. H. Zachman, a recent graduate of the University of St. Louis, who did his interne work at St. Mary's Hospital of Minneapolis.

Dr. Fred T. McGarvey, formerly of Cavour, S. D., died at Highmore, S. D., in March, at the age of 57. He was a graduate of the College of Medicine of the University of Tennessee, class of '00.

The Northwestern Hospital at Brainerd, which has been operated for about a year by the Protestant Churches Hospital Association of that city, has been closed on account of financial troubles.

Dr. Harold A. Miller, of Brookings, is now chairman of the County (Brookings) Board of Health and County Health Officer, succeeding his father, Dr. C. E. Miller, resigned, who held the position for twenty years.

Dr. E. E. Stephens has moved from Aberdeen, S. D., to Sioux Falls, S. D. Dr. Stephens is a graduate of the Medical School of the University of Minnesota, and served his internship in the University and General Hospitals.

Martin County, Minnesota, of which Fairmont is the county-seat, is making a national reputation for its health work. Over 3,000 diphtheria protection certificates have been issued to school children of that county who received diphtheria immunization.

The Northwestern Medical Officers' Association met in St. Paul last month, and the following officers were elected: President, Dr. W. F. Mertz, New Prague; vice-president, Dr. L. A. Barney, Duluth; secretary-treasurer, Dr. G. A. Snyder, St. Paul.

The sum of \$250,000 for a building for the Children's Hospital in St. Paul is now assured, and an endowment fund of \$500,000 is to be raised by the friends of the proposed children's research hospital. Dr. Walter R. Ramsey, of St. Paul, is at the head of the enterprise.

Dr. Paul H. Rowe, of Minneapolis, has returned from over a year's study in Vienna. Dr. Rowe says that the fees in the Vienna clinics are very reasonable, often absurdly low, and that the diagnostic work seen there is notable for its thoroughness.

Dr. Charles S. Donaldson, a son of Dr. C. A. Donaldson, of Minneapolis, was married last week to Miss Catherine Ritchie, also of Minneapolis. Dr. Donaldson is a recent graduate of the University of Minnesota Medical School, and has moved to Foley from Becker where he has been practicing for the past year.

Dr. J. C. Litzenberg, of Minneapolis, attended the meeting of the American Gynecological Society at Stockbridge, Mass., May 20, 21, and 22, where he presented the paper "The Relation of Basal Metabolism to Sterility." At this session he was elected to represent the Society on the Board of Governors of the American College of Surgeons.

Local and county health officers of Montana will meet in Billings, on July 14 and 15, two days before the meeting of the State Medical Association of Montana. On July 15 the health officers will meet with the Montana Academy of Oto-Ophthalmology for a clinic on trachoma to be given by Dr. L. Webster Fox, of Philadelphia. Dr. A. J. Chesley, Executive Officer of the Minnesota State Board of Health, will take part in the discussion.

The Minnesota Eugenics Society, organized "to promote race betterment," was incorporated last month, and the following well-known men were elected officers: President, Dr. Charles F. Dight, Minneapolis; first vice-president, Dr. G. G. Eitel, Minneapolis; second vice-president, W. A. Laidlaw, St. Paul; secretary, Dr. Walter E. List, Minneapolis; treasurer, C. A. Quist, Minneapolis. The first Council consists of 87 men, mainly physicians prominent in the state.

The Minneapolis Journal, in its issue for May 18, pays THE JOURNAL-LANCET the compliment of printing in full its two recent editorials on the controversy between the physicians of the state and the University Medical School on the subject of admitting pay-patients to the Hospital. The able and widely circulated *Minneapolis Journal* thus gives the people of the Northwest an opportunity to learn the position of medical men on this subject.

Dr. F. L. Adair, of Minneapolis, attended the meeting of the American Health Congress at Atlantic City, May 17-22, where he presented a

paper on "Recent Contributions of Pathology to the Problem of Neo-Natal Welfare." He also attended the meeting of the American Gynecological Society and was elected treasurer of this organization for the ensuing year. The American Gynecological Society, which was founded in 1876, celebrated its fiftieth anniversary at the Stockbridge meeting.

The North Dakota State Medical Association held its annual meeting in Minot, N. D., on May 26 and 27. The editor of THE JOURNAL-LANCET was present and was much impressed with the high character of the papers presented and all the work done. He will give a report of the meeting in our next issue. The following officers were elected: President, Dr. N. O. Ramstad, Bismarck; president-elect, Dr. T. Mulligan, Grand Forks; first vice-president, Dr. W. F. Sihler, Devils Lake; second vice-president, Dr. John Crawford, New Rockford; secretary, Dr. A. J. McCannel, Minot; treasurer, Dr. W. W. Wood, Valley City; delegate to the A. M. A., Dr. E. A. Pray, Valley City; alternate delegate, Dr. Andrew Carr, Minot. The following were recommended to the Governor for appointment to the State Board of Medical Examiners: Dr. H. M. Waldren, Drayton; Dr. Murdock MacGregor, Fargo; Dr. H. H. Healy, Grand Forks.

THE SOUTH DAKOTA PUBLIC HEALTH ASSOCIATION

The meeting of the State Health Officers was held May 18 at the call of J. F. D. Cook, M.D., Superintendent of the State Board of Health. The meeting was well attended, and all present voiced an interest in the material presented by the various speakers and the showing of public health films. The public health nurses of the third district attended this meeting, they having had their meeting in the forenoon.

An organization was perfected as suggested in remarks to the health officers' assembly at the opening of the meeting. The following officers were elected for the new organization, The South Dakota Public Health Officers' Association:

J. C. Waterman, M.D., President, Burke, S. D.
A. H. Tufts, M.D., Vice-Pres., Sioux Falls, S. D.
J. F. D. Cook, M.D., Secretary, Langford, S. D.

—J. F. D. Cook, M.D.,
Secretary-Treasurer.

CASS COUNTY (N. D.) MEDICAL SOCIETY MEETING, APRIL 29, 1926

President Taintor in the chair.

Minutes of previous meeting read and approved.

It was unanimously voted that all Fargo doctors should close offices Saturday noons, May 15 to September 1. The Secretary was authorized to have cards to that effect printed.

Dr. V. J. LaRose, of Bismarck, presented a paper on general topic of "Medical Legislation," discussing

the problems which are before us in North Dakota and emphasizing the value of public health education in order to better inform the voting public on health and medical matters. A very hearty discussion followed the paper.

It was unanimously voted that our delegates to the next state meeting should be instructed to support any constructive program for medical legislation which might be presented to the House and that also they should lend their efforts towards securing a lobbyist at the next meeting.

—LESTER J. EVANS, M.D.,
Secretary.

CRIPPLED CHILDREN'S CLINIC IN SOUTH DAKOTA

On May 11 Doctor Emil S. Geist, of Minneapolis, came to DeSmet, S. D., on the invitation of the State Division of Child Hygiene to hold a clinic for the examination of crippled children. The clinic was in conjunction with the meeting of the Kingsbury County Medical Society of South Dakota. Twenty patients were scheduled, but double that number came for examination from the following counties: Beadle, Kingsbury, Yankton, Codington, Miner, Hutchinson, Bon Homme, Lake McCook, Jerauld, Brown, Turner, and Hand. All of the physicians of Kingsbury County and a number from adjoining counties attended the meeting.

Doctor Geist has already taken for treatment one of the children examined for the Division of Child Hygiene. His services for these children has always been rendered gratis. Four of his former State cases came for re-examination. Comparing their condition now with the condition before treatment was begun makes one feel that the age of miracles has not passed—or has perhaps returned. The joy of these young patients and the gratitude of their parents was a thing beautiful to see.

The clinic was held in the court house. Excellent arrangements had been made for which Doctor E. H. Grove, President, and Doctor B. A. Dyar, Secretary, were responsible. Miss Florence E. Walker, R.N., former State Supervisor of Nurses, Miss Lelia Rowley, R.N., Miss Mabel Draxton, R.N., and Miss Margaret Martens, R.N., County nurses of Miner, Turner, and Yankton Counties assisted Doctor Clara E. Hayes with the management of the clinic.

It had been planned that Doctor Geist should present a number of instructive cases at an afternoon meeting, but because of the large number to be examined, and the fact that practically all of the doctors had been present during the examinations, he made a very brief address on certain types of the cases that were present.

The Kingsbury County Medical Society is the only county society in the State which has a membership of 100 per cent of the physicians in the county, and attendance at its meetings is usually 100 per cent.

In the evening an excellent banquet was given by the Medical Society to the members, their wives, and a large number of guests from out of the county. During the banquet the children of the DeSmet schools gave a pleasing program of music and readings. In a brief speech Doctor Geist demonstrated that surgery was not his only accomplishment. Doctor J. F. D. Cook, Superintendent

of the State Board of Health also made a brief address and announced some of the interesting features that had been planned for the coming meeting of the State Medical Association.

—CLARA E. HAYES, M.D.

RUSH GRADUATES AT THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION MEETING

At this, the forty-fifth annual meeting of the South Dakota State Medical Association held at Aberdeen, May 19-20, 1926, Rush graduates did their best to make the meeting a success, for we provided the President, Dr. W. R. Ball, '02, and of the nine papers and dry clinics provided for the program, four were by Rush fellows: Frederick Tice, '94, of Chicago, "Chest Diseases"; Wm. R. Murray, '97, of Minneapolis, "Eye Diseases"; M. M. Myers, '18, of Des Moines, "Heart Diseases"; R. T. Woodyatt, '02, of Chicago, "Diabetes."

Wednesday evening 40 Rush fellows sat down to a fine supper that Douglas Alway, '23, had arranged for us.

Our Faculty guest, Prof. Rollin T. Woodyatt, '02, gave us a very interesting talk about the Rush in its new Rawson building on the site of the old Rush building this being used for the junior and senior classes until the new Billings Hospital and Medical Buildings on the Midway are completed. The West side buildings, Rawson Laboratory, Senn Clinical Hall, the Laboratory across Harrison St., with the Presbyterian Hospital that occupies all the rest of the large square block, will be used for the Rush Post-Graduate School of the University of Chicago.

The magnificent Medical School and Hospital buildings facing South on the Midway just west of the Classics and Harper Library buildings. These Medical buildings are being rushed to completion, the roofs now being put on.

The Faculty is being quietly selected from the best men in each special line, and another year the best medical school will be found on the University of Chicago Midway.

Most interesting talks and stories were then given by F. E. Clough, '02; W. R. Ball, '02; J. E. Kutnewski, '82; the earliest graduate present, J. Douglas Alway, '23, the latest graduate present; O. R. Wright, '93;—one lone "Hopkins" fellow was present, T. F. Riggs, the new president of the South Dakota State Medical Association. He was asked to explain how "Hopkins" had stolen our beloved surgeon, Dean Lewis. Other stories of the good old days were told by G. J. Long, '09; O. A. Kimble, '08; M. C. Johnston, '96; L. N. Grosvenor, '02.

The following Rush graduates were present for the supper and the meeting:

J. E. Kutnewski, '82, Redfield
F. H. Staley, '86, Vienna
R. R. Jones, '88, Britton
F. M. Crain, '91, Redfield
O. R. Wright, '93, Huron
Frederick Tice, '94, Chicago
F. W. Freiberg, '95, Aberdeen
C. E. Sargent, '95, Isabel
C. L. Wendt, '95, Canton
M. C. Johnston, '96, Aberdeen
W. R. Murray, '97, Minneapolis
F. L. Class, '99, Huron
A. S. Rider, '00, Flandreau

G. S. Adams, '01, Yankton
 J. C. Ohlmacher, '01, Vermillion
 G. W. Potter, '01, Redfield
 W. R. Ball, '02, Mitchell
 F. E. Clough, '02, Lead
 L. N. Grosvenor, '02, Huron
 D. S. Kalayzian, '02, Parker
 C. E. McCauley, '02, Aberdeen
 C. O. Olson, '02, Groton
 J. E. Schwendener, '02, Bryant
 R. T. Woodyatt, '02, Chicago
 J. E. Bruner, '04, Frederick
 J. F. Adams, '06, Aberdeen
 W. S. Chapman, '06, Redfield
 O. A. Kimble, '08, Murdo
 G. J. Long, '09, Ramona
 J. F. McKie, '10, Wessington
 A. A. McLaurin, '11, Pierre
 G. V. Jamieson, '13, DeSmet
 J. R. Westaby, '13, Madison
 Owen King, '16, Aberdeen
 R. G. Mayer, '16, Aberdeen
 C. E. Lowe, '18, Mobridge
 C. G. Lundquist, '18, Leola
 M. M. Myers, '18, Des Moines
 A. Severide, '19, Webster
 E. A. Pittenger, '19, Aberdeen
 J. L. Calane, '20, Aberdeen
 J. H. Lloyd, '20, Mitchell
 J. D. Alway, '23, Aberdeen
 W. N. Graves, '23, Webster

Signing off,

L. N. GROSVENOR, '02,
 Huron, S. D.

Position as Locum Tenens Wanted

During the months of July, August, and September. Address Dr. B. E. Reilley, care of the Ancker Hospital, St. Paul, Minn.

Fine Opening in Iowa Town

A young man is wanted in a town of 800 in Iowa, with hospital facilities. Nothing to buy. State particulars in first letter. Address 157, care of this office.

Partnership Opening

I am looking for a doctor, preferably a German-speaking and a catholic, capable in surgery and gynecology, to join me in partnership and operation of a small hospital in Minnesota. Good references and \$2,000 required. Address 164, care of this office.

Specialist Wanted

An Eye, Ear, Nose, and Throat man is wanted to join a Minneapolis Clinic. Ability and personality necessary. Salary leading to a partnership arrangement. Address 165, care of this office.

Minneapolis Office Space for Rent

Fine front office space for rent in the Syndicate Building for dentist or physician at very reasonable rent. Call upon or telephone David T. Jones, Dentist, 416 Syndicate Bldg., Telephone Ge 5204.

Office Position in Minneapolis Wanted

By a young woman who has taken a course in laboratory training and can do routine work. Is a typist and will take charge of office. Will accept very moderate salary. Address 161, care of this office.

Work Wanted

By a German-speaking physician of excellent training and large experience. Position wanted as assistant, partnership, or locum tenens. Spent eight years in postgraduate hospital training, chiefly surgical and gynecological. Best of references. Address 138, care of this office.

Unusual Opportunity for Young Physician

Old-established practice in best small city in Minnesota of 7,000 population. Because of illness will sell or form permanent partnership. Complete office including X-Ray and other electrical equipment. Principally office and city practice. Address 166, care of this office.

Fine Location and Fine Office in Minneapolis

There is a splendid location in a fast-growing section with no competition at 2300 West 50th St. Steam-heated modern offices at reasonable rent. End of the Oak and Harriet carline in fine new section of city. Inquire at above location or telephone Walnut 2413 (Christianson Drug Co.) or Hyland 3129 (owner of property).

Laboratory and X-Ray Technician Wants Position

Efficient and dependable technician desires position. Is a graduate in clinical laboratory work and has had eight years' experience in doctor's office and hospital as x-ray, laboratory, and physiotherapy technician and assistant. Has had one year's experience in hospital nursing and some training in anesthetics. Prefer position in office or clinic. Will go out of city. Excellent references. Address 160, care of this office.

TUBERCULOSIS -:- June 28--July 3, 1926

A one-week short course in Tuberculosis for general practitioners will be held by the University of Minnesota Medical School at the University and at Glen Lake Sanatorium on the above dates. Lectures and clinics by specialists. A large number of patients and special clinical facilities at the Sanatorium. Fee for the week \$25.00.

A short course in Tuberculosis for nurses will be held at the University and Glen Lake the week of June 14.

FOR INFORMATION ADDRESS

THE GENERAL EXTENSION DIVISION

UNIVERSITY OF MINNESOTA, MINNEAPOLIS.

THE JOURNAL- LANCET

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A STUDY OF THE NORMAL AND PATHOLOGICAL PHYSIOLOGY OF THE LIVER, WITH A CONSIDERATION OF THE KNOWN TESTS FOR LIVER FUNCTION*

By LEONARD W. LARSON, M.D.

From the Division of Clinical Pathology, Quain and Ramstad Clinic
BISMARCK, NORTH DAKOTA

INTRODUCTION

In view of the fact that this society is interested mainly in strictly clinical subjects it was with some hesitation that I decided to present a survey of the liver. However, when we consider that a large number of investigators have directed their attention to the liver, especially during the past five years, and that a large symposium on the liver was conducted at the last annual meeting of the American Medical Association (1925) by clinicians, as well as workers interested primarily in the fundamental medical sciences, I am sure that whether we be general practitioners or interested in the various specialties, we can well afford to be familiar with recent progress in the study of this important organ.

It is only during recent years that the study of the liver has been made possible. Biologic chemistry and its outgrowths, chemical physiology and chemical pathology, have provided a method of approach to the study of the parenchymatous organs of the body in addition to the study of morbid anatomy. The advances in the methods of determining renal function have been particularly striking. Most clinicians rely chiefly on the urea and creatinin content of the blood, and

the study of the phenolsulphonephthalein excretion, as indexes to renal function. However, the study of renal function has been comparatively simple because the urine, and the blood, from which it derives most of its constituents, can readily be analyzed. No analogous materials are available in the study of hepatic function. The metabolism of the body with which the liver concerns itself is so complicated and so interwoven with the functions of other organs that it is most difficult of estimation. Mann has found that only 15 or 20 per cent of the liver suffices for ordinary bodily needs; and this extreme "reserve power" of the liver adds to the many difficulties in determining its complex functions.

The following methods are employed in the investigation of liver functions in man and in animals:

1. Excretory or secretory function can be studied by biliary fistulæ or by collecting the bile direct from the duct.
2. By collecting and analyzing portal and hepatic blood during digestion and in fasting.
3. By means of the Eck fistula operation in which an anastomosis of the portal vein with the inferior vena cava is made so that all the portal blood is shunted into the general circulation.
4. Chemical analysis of the blood and urine

*Presented before the Sixth District Medical Society of North Dakota, at Mandan, February 19, 1926.

in cases of spontaneous liver disease or experimental injury.

5. Extirpation of the liver and a subsequent study of the blood.

6. Direct chemical and histologic analysis of liver tissue.

7. Perfusion of the excised liver.

RELATION OF LIVER TO FORMATION OF BILE PIGMENT

Until recently it was thought that the formation of bile was a peculiar function of the liver alone. Bile pigments appear in demonstrable amounts in the bile canaliculi of the normal or abnormal hepatic epithelial cell, and it was easy, therefore, to consider the hepatic cell the only essential factor in the elaboration of bile pigment. Whipple¹ first called attention to the fact that other body cells have the capacity rapidly to change hemoglobin into bile pigment. Mann et al² found that following complete removal of the liver in dogs, a yellow color consistently developed in the urine, plasma and fatty tissue of all animals living more than six hours. They remove the possibility of this yellow color being due to some compound intermediate between hemoglobin and bilirubin by finding that the pigment in hepatectomized dogs is identical in its curve of light transmission with that of the pigment recovered from dogs in which an experimental obstruction had been produced by removing the gall-bladder and ligating the common duct. It is evident, therefore, that there exists some mechanism outside the liver, which, if it is not continually in operation normally, is certainly able to take over the function of bile formation upon immediate notice. With the liver excluded as at least the chief producer of bile pigment, a search was made for a new place of pigment genesis. Rich³ presented the view that the reticulo-endothelial cells were responsible for the origin of bile pigment, but he had no experimental proof to substantiate this contention. Recent work by Mann and his coworkers⁴ on hepatectomized dogs proves conclusively that bile pigment is added to the blood as it traverses the spleen and bone marrow. No addition of bile was detected in blood traversing other tissues or organs. The liver was not studied. Since the spleen and bone marrow are abundant in reticulo-endothelial cells, it is believed that wherever these cells are present, bilirubin will be formed. This would include the liver because of its Kupffer cells, lymph nodes, and the serous linings of the body cavities. From this it would appear that the possibilities for bilirubin genesis are numerous and capable

of producing more bile than that required for the ordinary needs of the body. It is possible that none of these sites works continuously or at capacity-production. The liver, therefore, must be considered primarily as an excretory organ for bile pigment. This view is in harmony with the well-known fact that jaundice may appear as a result of an excess rate of hemolysis (such as in hemolytic icterus) with no obstruction in the bile passages to the flow of bile from the liver to the intestines. Under these conditions the production of bilirubin from the liberation of excessive hemoglobin far exceeds the excretory ability of the liver and the clinical picture of jaundice results.

RELATION OF THE LIVER TO CARBOHYDRATE METABOLISM

Nearly three quarters of a century has elapsed since Claude Bernard's discovery of glycogen as a component of the liver. Subsequent work showed that glycogen may be ordinarily present in a large variety of tissues. To-day it is known that glycogen may be formed from protein, as well as carbohydrates, and probably from fat. Mann² found that after total removal of the liver in dogs, the body is no longer capable of maintaining a normal blood sugar level. The animal appears normal for several hours, but the blood-sugar level begins progressively to fall. At a certain point the symptoms of hypoglycemia develop and although the animal be moribund, the proper injection of glucose will cause a return to normal in blood-sugar level and symptoms. In time the blood sugar begins to fall again and the administration of glucose is efficacious. However, increasingly larger doses of glucose are required to obtain the desired result. Finally another group of symptoms develop, entirely different from those of hypoglycemia, and the dog dies irrespective of the amount of glucose administered. Mann has not as yet determined the cause of the second set of symptoms and the resulting death. The effect of hepatectomy on hyperglycemia was also investigated. If the liver and pancreas were both removed at the same time no different result is obtained than when the liver alone is removed. However, if an experimental hyperglycemia is first produced by means of a pancreatectomy, the removal of the liver results in a much more rapid lowering of the blood-sugar level, symptoms of hypoglycemia develop sooner, and the administration of glucose is less efficacious.

In hepatectomized dogs no increase in blood-sugar level could be produced by anesthesia and

operation, asphyxia and drugs. It was impossible to determine by means of the respiratory quotient just what happens to the glucose after hepatectomy. Normally, therefore, the liver is functioning at all times to maintain the normal blood-sugar level. Also the production of permanent and temporary hyperglycemia not due to the administration of carbohydrates depends on the liver. The liver is, therefore, not only a storehouse for carbohydrates and some mechanism for the maintenance of the blood-sugar level, but it probably also has the ability of converting proteins and fats into glycogen. That this glycogen-storage property may be regulated by hormones is attested by the fact that normal hepatic cells lose their ability to store glycogen in cases of severe diabetes mellitus or experimental hyperglycemia following complete extirpation of the pancreas and only regain that ability upon the administration of insulin.

RELATION OF THE LIVER TO PROTEIN METABOLISM

It has been suspected for some time that the liver is intimately associated with the production of urea. Mann² found that in dogs in which renal function was unimpaired, hepatectomy causes a marked decrease in the blood urea and nitrogen content of the tissues of the body and in the nitrogen excreted by means of the urine. He also found that the liver of dogs is responsible for the destruction of uric acid since the uric acid content of the blood and urine increases following hepatectomy. As long as renal activity is maintained no change in creatin-creatinin content of the blood was noted following hepatectomy so that the liver evidently takes no active part in the metabolism of these products.

RELATION OF LIVER TO FAT METABOLISM

So far no conclusive evidence has been produced concerning the relation of the liver to fat metabolism. Some workers claim that under certain conditions the liver desaturates fats and in this way prepares them for oxidation in the tissues. It is interesting in this connection to note that when glycogen storage in the liver is diminished fat storage is increased.

RELATION OF THE LIVER TO COAGULATION OF THE BLOOD

All clinicians appreciate the relation between jaundice and the clotting time of blood. Lee and White⁵ were the first to call attention to the coagulation time in blood, and Lee and Vincent⁶ two years later emphasized the close relationship between the tendency toward post-operative hemorrhage in patients with obstructive jaundice

and the delay in the coagulation time of the blood. They and Walters⁷ point out the value of the administration of calcium in such cases. Foster and Whipple⁸ following experimental work conclude that the liver is the only actively productive source of fibrinogen, although there may be certain limited reserve supplies in other body tissues. Schultz, Nicholes and Schaefer⁹ support this contention when they find that the fibrinogen of the blood can be decreased by producing an experimental necrosis of the liver. The normal content of fibrinogen is extremely small, and, therefore, it takes very little injury to the liver to produce a change in the fibrinogen content of the blood and its consequent clotting time.

PATHOLOGIC PHYSIOLOGY OF THE LIVER

From the foregoing discussion it is seen that the liver is concerned with the selection of materials from the blood and, after various modifications, proceeds to store them in its cells, to return them to the blood, or to eliminate them in the bile. It is of interest to note that phenolphthalein is excreted both in the urine and in the bile. Phenolsulphonephthalein is excreted chiefly by the kidneys, while phenoltetrachlorophthalein is excreted chiefly by the liver. On the other hand certain toxic substances have a selective destructive action on the liver when introduced into the body. Phosphorus and chloroform are examples of such substances. It is possible that certain toxic substances which do not injure the liver are destroyed by the liver, but there is no final evidence to substantiate this contention.

Carbon particles which have entered the blood stream are held within the liver; and in the advanced pulmonary anthracosis of miners anthracotic pigmentation of the liver may occur. The studies of Drinker and Shaw¹⁰ show that the liver is the organ chiefly concerned in the removal of insoluble particles from the blood. Metals in colloid suspension have been found to be removed from the blood by the liver. The endothelial cells or Kupffer cells are responsible for this action. It is a well-known fact that red-blood corpuscles that have undergone injury as the result of typhoid fever are ingested by phagocytes within the spleen, bone marrow, liver, and lymph nodes. In repeated experimental transfusions of blood from one animal to another, the spleen enlarges and attempts to protect the other organs but in time iron pigment is found deposited in the liver, bone marrow, and lymph nodes.

Exhaustive experimental studies have shown

that the liver is capable of removing bacteria from the blood stream. Because of its situation with relation to the portal circulation it can take up bacteria which may enter that circulation from the intestinal wall and thus prevent their entrance into the general circulation. It is also of interest in this connection to note that this ability of the liver to remove bacteria from the blood increases materially with immunization. This protective action of the liver in the presence of bacteria is also found in the presence of foreign proteins, in that the injurious effect of the foreign protein is diminished and this protective action is increased as the result of immunization.

COMMENT

Thus we find that the liver is definitely concerned with the maintenance of the normal blood-sugar level, with the production of urea, possibly with the desaturation of fats, with the coagulation time of blood, and with the removal from the blood stream of certain harmful substances. It would seem, therefore, that tests of these functions in man would be of value in the diagnosis, prognosis, and treatment of conditions in which the liver plays some part. Liver-function tests are numerous, but because of the limited knowledge of liver function, the multitude of liver activities, and the great reserve power of the liver, no one of them can be looked upon as final evidence of the ability of the liver to perform its various duties.

FRUCTOSE TOLERANCE TEST

Fructose is rapidly absorbed from the digestive tract in the normal subject and is very easily formed into glycogen by the liver. During this process no change in the blood sugar occurs. The respiratory quotient rises slightly, which may account for the combustion of part of it. In cases of hepatic disease, glycogen formation is supposedly impaired, so that the administration of fructose with a resulting increase in blood sugar would indicate an impairment of the function of glycogen formation. Experience with this test in patients shows it to be of little value. Possibly this is due to the large variations in the normal subjects, the unknown factors in sugar metabolism, and the reserve power of the liver. Greene¹¹ says, "In general we believe that while tests of fructose tolerance may be of value from an experimental standpoint, they are of questionable importance in the diagnosis and treatment of the individual patient."

WIDAL HEMOCLASTIC CRISIS

Widal believes that an important function of

the liver is the detoxification of protein split products formed in the intestinal canal during digestion. The passage of these products into the general circulation would indicate failure of the liver in performing this function. This results in changes in the blood pressure and a transitory leukopenia. Widal designates this condition as the hemoclastic crisis and has perfected a procedure in which the leukocyte count is studied after a fast of five hours and then at half-hour intervals following the ingestion of 200 c.c. of milk. However, the test is uncertain and observers have been unable to correlate the findings with those of other tests.

DYE EXCRETION TESTS

Phenoltetrachlorphthalein was first prepared by Orndorff and Black¹² in 1909. Abel and Rowntree¹³ showed that the dye is withdrawn from the blood by the liver. As originally carried out, the dye was injected intravenously and the total feces collected for 48 hours. The total amount of dye in the stools was estimated and it was found that in the normal subject 30 to 50 per cent of the dye injected was recovered in the stools. From patients with liver disease the amount recovered was decreased. This technic was laborious and McNeil¹⁴ developed a method in which, by means of a duodenal tube, the time for the appearance of the dye in the duodenum and the total amount of dye recovered within two hours, was determined. He insisted that the test was an index to liver function.

The difficulties and impracticability of these methods of study led Rosenthal¹⁵ to develop a new technic. He found that normally the dye is removed rapidly and uniformly from the blood stream. In normal persons only 2 to 7 per cent of the dye remains at the end of an hour. Rosenthal found that deviation from the normal in rabbits first occurred when 12 per cent of the liver was excised. Above 12 per cent the retention of the dye in the serum was directly proportional to the amount of the liver tissue excised. He found that after experimental hepatic cell necrosis following phosphorus and chloroform poisoning the retention of dye was increased. Subsequent work has shown this test to be of much value. In patients with obstructive jaundice the retention of dye may be as high as 30 per cent two hours after injection. In man, cases of cholecystitis without jaundice show only the slightest degree of dye retention. However, with the development of jaundice the retention increases and in all cases the degree of retention roughly corresponds to the degree of

retention of bile pigment. Relief of the obstruction is followed by a prompt return to normal in dye excretion except in cases where there is a residual hepatitis. In cases of acute infection or catarrhal jaundice, syphilis, jaundice following arsenical treatment and chloroform anesthesia, pneumonia, exophthalmic goiter, and acute yellow atrophy of the liver, marked retention of the dye is present. However, it is of the greatest value in cases where jaundice does not dominate the clinical picture. In carcinoma of the gastrointestinal tract normal dye excretion is usually found with no evidence of metastasis into the liver, while a deviation from the normal indicates a metastasis. True toxemia from pregnancy will give an increased dye retention while neurotic vomiting and eclampsia of nephritic origin will not. The retention of the dye has definite diagnostic value in biliary, syphilitic, or portal cirrhosis; however, this test is ever of limited value because of the large factor of safety in the liver and because it does not designate functional changes characteristic of any particular etiologic agent.

THE VAN DEN BERGH TEST

A century ago Tiedeman and Gmelin reported the presence of bile pigment in the blood of a patient with obstructive jaundice. Gmelin's test has remained classic until recently. Ehrlich found that when sulphanilic acid and sodium nitrite were added to solutions of bilirubin, a colored addition product, azobilirubin, was formed. This reaction is specific and will detect bilirubin in dilutions of 1 to 1,500,000. Van den Bergh precipitated the serum proteins with alcohol and applied Ehrlich's reaction to the alcoholic extract. Investigators have found that in the normal human subject bilirubin is present in the proportion of 1 to 500,000 or 1 to 600,000.

In discussing the mechanism of jaundice Mc Neil¹⁴ finds four circumstances under which icterus may arise:

1. The bile pigment formed in the reticulo-endothelial system passes through the polygonal hepatic cells normally to reach the bile capillaries but is obstructed there and reabsorbed into the blood.

2. The polygonal hepatic cells are damaged, and the bile pigment carried to them is unable to enter, so the bilirubin passes along the hepatic venous radicles into the general circulation.

3. There has been an excessive destruction of blood cells and too much bilirubin formed for the polygonal cells to deal with.

4. Besides the damage and disorder function

of polygonal cells there is obstruction in the ducts, such as that caused by cholangitis. Mc-Nee,¹⁶ therefore, classifies jaundice into three clinical groups: obstructive hepatic jaundice; toxic and infectious hepatic jaundice; and hemolytic jaundice. He showed that there are differences in the forms of bilirubin present in the serum in obstructive and hemolytic jaundice. Van den Bergh found that the bilirubin in the two conditions reacts differently in the diazo reaction. He accordingly finds a so-called "direct reaction" in obstructive jaundice and an "indirect reaction" in hemolytic jaundice. However, all investigators do not agree on this point. Following hepatectomy in dogs, Mann¹² found that the reaction is first indirect and as the jaundice increases the reaction changes to the direct. Whatever the value of this qualitative portion of Van den Bergh's test may be the quantitative portion of the test is of proven value.

Greene¹¹ in discussing the Van den Bergh test cites four situations in which it is of value:

1. In estimating the degree of retention of bile in patients with obstructive jaundice.

2. In furnishing a quantitative index for the degree of jaundice observed in the various toxic or infectious types.

3. In following the course of jaundice due to any cause.

4. In demonstrating the presence of latent jaundice.

In stressing the importance of the Van den Bergh test in the differential diagnosis and in following the course of jaundice, two cases of interest might be cited:

CASE 1.—Mrs. D. entered the hospital on July 9, 1925, complaining of a feeling of fullness and a sensation of pressure in the epigastrium for the past two months. She had had three or four previous attacks. There was an occasional sharp pain over the gall-bladder, she would vomit, she had been jaundiced for the past month and had lost twenty pounds recently. According to her statement the stools had never been clay colored, in fact, had been darker than normal of late. She volunteered the information that the jaundice was progressing. Examination showed a marked jaundice with some purpuric spots on the lower extremities. Tenderness over the gall-bladder was not marked. With the indefinite history, the loss of weight, the progressive jaundice, the absence of clay-colored stools, the cause of the icterus was rather uncertain. Cholecystitis with stones, cholangitis, neoplasm, and hemolytic icterus were considered. The Van den Bergh reaction showed a direct reaction with 25 units of bilirubin in the serum. The direct reaction indicated an obstructive jaundice and the 25 units of serum bilirubin showed a marked increase over the normal 0.2 to 0.5 units. The coagulation time was only slightly increased. Because of the severe

jaundice it was decided not to operate. The day following admission the stools became lighter in color and finally became clay colored. Her condition remained about the same for a week when it was thought that the jaundice was decreasing. The stools were still clay colored, but a Van den Bergh test showed a direct reaction with only 11.25 units of serum bilirubin. That same day the stools showed color, and from then on until the patient left the hospital the jaundice decreased and the stools assumed their normal color. On August first the Van den Bergh reaction was negative with only 3.4 units of serum bilirubin. The patient refused operation at this time and went home. She returned August 19 with a recurrence of the epigastric distress and an increase in the jaundice. A Van den Bergh reaction at this time showed a direct reaction with 10 units of serum bilirubin, almost three times that found when she left the hospital nineteen days before. She was operated on the following day, and a cholecystitis with stones was found.

In this case the Van den Bergh reaction was of value, first, in differentiating the obstructive type of jaundice from the hemolytic type. In the second place the progress of the jaundice could be watched carefully; and, incidentally, the drop in the serum bilirubin excluded the possibility of a neoplasm.

CASE 2.—Mrs. R. entered the hospital on December 16, 1925, with a history of initial nausea and vomiting followed by upper right abdominal pain. Jaundice followed and on admission the patient was almost lemon colored. The history and physical examination were not typical of gall-bladder trouble. The stools were clay colored. The Van den Bergh test showed a direct reaction with 26 units of serum bilirubin. The clay-colored stools and the direct Van den Bergh reaction stamped this as an obstructive jaundice. However, it was not thought that the gall-bladder was the primary seat of the trouble; the consensus of opinion leaning toward a duodenitis as the etiologic factor. She was treated medically, the jaundice decreased, and the stools became bile stained. She left the hospital on January 5. She re-entered the hospital on January 30 with a history of several attacks of right upper abdominal pain and what she interpreted as a slight recurrence of the jaundice. Examination at this time showed a slight icteric tinge to the sclerae and skin and a definite painful mass in the gall-bladder region. The Van den Bergh test showed a negative reaction with only 1.2 units of serum bilirubin. It was concluded that on the previous admission to the hospital she had had a primary duodenitis with severe jaundice, and that with the decrease in the duodenitis the obstruction was relieved and the jaundice subsided; that the infection subsequently passed up to the gall-bladder and liver and that these conditions were of paramount importance at this time. The low serum-bilirubin indicated that the jaundice present was a residual jaundice from the first attack. She was operated on February 6, and a duodenitis with adhesions, a slight cholecystitis with one stone, and definite macroscopic evidence of a hepatitis were found.

The Van den Bergh test in this case was not of so great value in differentiating the type of jaundice, for the clay-colored stools indicated an obstruction to the bile passages, but at the first examination it showed the presence of a very large amount of

bilirubin in the blood and at the second examination revealed such a small amount that improvement was evident and surgery was comparatively safe.

Judd¹⁷ defines manifest jaundice as "A symptom of a condition in which bile escapes from its normal channels into the body tissues and stains them yellow or green." The normal bilirubin content in blood serum is 1 to 500,000 or 1 to 600,000. It has been shown that the proportion of blood serum bilirubin may increase to 1 to 50,000 or 1 to 60,000 before any sign of jaundice is shown by the skin, urine, or feces. This condition lying between the point of normal bilirubin and clinical jaundice is called "latent jaundice," and it is in the detection of latent jaundice that the Van den Bergh test is perhaps of greatest clinical value. In pneumonia, exophthalmic goiter, the toxemias of pregnancy, or following the administration of arsphenamin, increased bilirubin content predicts the onset of toxic icterus. Congestion of the liver as a result of myocardial failure can be detected by rising levels in the serum bilirubin content. Early pernicious anemia will often give bilirubin levels above normal and in cases where liver metastases can be excluded, might be used in differentiating primary anemia from gastric carcinoma. In the diagnosis of cases of abdominal colic this test is of great value. Blalock says that less than one-third of all biliary colic is followed by manifest jaundice. Without jaundice the diagnosis may be very difficult. The serum bilirubin is elevated following biliary colic, and in such cases the finding of a latent icterus is diagnostic. Greene¹¹ reports several cases of acute unlocalized abdominal pain in which the finding of a latent jaundice by means of the Van den Bergh test led to the correct diagnosis. Judd¹⁷ says that the test is especially of value in cases where a condition of latent jaundice is discovered, the patient is given the advantage of modern pre-operative treatment and guarded against the possible sequelæ of surgery in the presence of a hyperbilirubinemia.

Two cases showing the value of the Van den Bergh test in the diagnosis of latent jaundice might be cited:

CASE 1.—Mrs. W. entered the hospital complaining of pain in the right abdomen following an injury she sustained when the automobile in which she was riding was struck by a train. There was no jaundice, and physical examination revealed only a large tender mass in the right abdomen. The Van den Bergh reaction showed 2.5 units of bilirubin in the blood serum. This meant a latent jaundice and aided in the diagnosis of a traumatic liver.

CASE 2.—Mrs. G. entered the hospital complaining of severe right upper abdominal pain. The pain was not referred to the back or to the shoulders.

There was no jaundice. Examination showed a tender mass in the gall-bladder area. The Van den Bergh reaction showed the presence of a latent jaundice, there being 2 units of bilirubin in the blood serum. Operation was performed and a large perforated gall-bladder filled with stones was found.

SUMMARY

The liver is very intimately concerned in the metabolism of carbohydrates, proteins, and fats. It has the ability of removing toxic materials, bacteria, foreign proteins, etc. from the blood stream. Because of this diversity of functions numerous tests have been devised to measure liver function. Of these the ability of the liver to excrete phenoltetrachlorophthalein and the serum bilirubin content are the most valuable indexes to hepatic function. However, we must look upon these tests as merely confirmatory evidence, realizing that the liver has such a large factor of safety and that because of its multitude and complexity of functions no one test can be a measure of the liver to perform its other physiological activities.

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AFTER-TREATMENT OF OPERATIVE WOUNDS*

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Delay in the healing of operative wounds and the complications which occur during the process are not the result of chance but can be assigned to very definite causes. The mishaps may be avoided in many cases if these causes are taken into consideration in time.

Many patients suffer from diseases which cause anemia, low resistance to infection, and depreciation of the ability to repair. When operation is not emergent pre-operative preparation of patients not only makes the operation safer but tends to promote postoperative healing. Adiposity is attended by delay and complications in healing, as well as by increased operative risk. The relatively thin abdominal wall heals more quickly and with less likelihood of complications.

Preparation of the skin prior to incision has an important bearing on its subsequent healing. Antiseptic agents which have a tendency to devitalize the skin naturally prepare a field for the growth of bacteria. The great number of new antiseptics is ample proof that the ideal has not

yet been reached. The war was responsible for stabilizing Dakin solution and dichloramin-T, the active agent of which is chlorin. Since then many products belonging to the coal-tar group have been offered, such as chinosol, flavin, acroflavin, and the dyes, gentian violet, and mercurochrome. The ideal antiseptic is one which preserves its bactericidal power without altering the constituents of the blood to such a point that its powers of resistance are diminished.

The lesion which demands operation and the presence or absence of infection in the operative field have an important bearing on subsequent healing. When infection is present in or near the primary lesion, especially if drainage is required, healing is not likely to be prompt and uncomplicated.

The less the amount of traumatism when hemostasis is being secured and the less suture material left in the wound, the less the probability of complication. When sutures are drawn too tightly the included tissue becomes edematous as the circulation is obstructed. Such areas afford fertile ground for bacteria.

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The postoperative effects of the anesthetic may interfere with satisfactory healing. The straining movements during vomiting damage the tissues in the wound, especially when the incision is abdominal. Ligatures are displaced, and bleeding continues until it is checked by its own pressure. Postoperative cough and pneumonia sometimes have so serious an effect on the healing process and on the sutures themselves that hernia may result.

EXAMINATION OF THE WOUND

During the examination the patient should lie on a table with the legs flexed, the hands at the sides, and the head resting on a pillow. The utmost relaxation should be obtained both by posture and by ease of mind. The wound and the neighboring surfaces should be inspected for any irregularities of contour. When the abdominal wall is fat, a pocket of serum or a deep-seated hematoma may be mistaken for adipose tissue. In the case of abdominal wounds palpation should begin at the flanks. The entire palmar surfaces of both hands are applied with fingers pointing toward the median line, the examiner facing the patient's feet. Palpation is begun just above Poupart's ligaments, and the hands are given a gentle, rocking motion. When palpation has reached the level of the umbilicus the examiner reverses his position and palpates similarly to the epigastrium. Induration may be felt or the pressure may cause oozing from the wound. In this manner hematomas and deep-seated abscesses can be quite readily recognized. The line of incision should always be palpated bimanually, with the points of the fingers. The wound may appear to be perfectly normal and the incision well-healed in spite of an accumulation of fluid in its depths, especially if the abdominal wall is fat.

COMPLICATIONS

Infection.—When fluctuation is observed under definite tension, dependent drainage should be established, and always at the lower end. It is not always advisable to open the incision, and a stab wound will serve the purpose better. After enucleation of some tumors from the breast a serosanguineous pocket is likely to form. Sometimes this cannot be recognized until the breast is lifted with the fingers of one hand while the other palpates for fluctuation and induration. After the removal of subdermal fibroids, fluid is very likely to accumulate. Stab drainage at the dependent point is the quickest way of relieving the complication.

When a slight amount of serum is draining from a wound which should be dry, the cause may be either infection or foreign material such as sutures and ligated stumps of blood vessels together with the partially digested, incorporated tissue. The mere absence of heat, redness, pain, and pyrexia does not prove the absence of infection, since organisms may be virulent enough to produce exudates in the wound and yet too mild to produce either the usual local or general manifestations of inflammation. Even when slight induration and redness appear locally there may be no change in the pulse rate or temperature. These signs are at first diffuse, but after the application of hot packs for a few days they become localized.

The first signs of complication usually appear between the fourth and seventh days. There may be no constitutional reaction, but the patient will complain of some stiffness in the wound with possibly a sense of tension or pressure. Before the seventh day there may be no tangible evidence of inflammation. From the seventh to the ninth day if the wound is not actively infected, indurated areas and possibly beginning fluctuation may be discovered on palpation. From the twelfth to the fourteenth day the change is quite pronounced, and it is not difficult to diagnose a fluctuating pocket which may contain serum or pus or consist of a hematoma. If such a pocket is just external to the fascia, and especially if the wound is situated in a thick abdominal wall, several days may be required for it to move toward the surface until it can be reached with an ordinary pair of forceps. If, however, there are much tenderness and evidence of a good deal of fluid under tension, one is justified in opening the incision with a knife and spreading the tissue sufficiently to expose and drain the pocket. The patient is immediately relieved, and the period of healing shortened.

Large, fulminating, superficial growths, such as carcinoma of the breast or sarcoma of the thigh, which are intensely swollen with granulation tissue undergoing necrosis, bleed easily and emit foul odors. The magnitude of the lesion is often an inaccurate index of the real amount of malignant disease present. This is due to mixed infection of the tissues in the neoplastic growth and the inflammatory reactions which increase the size of the tumor to several times that of the actual malignant tissue itself. Ulceration of the lower bowel or carcinoma of the rectum may often present a large indurated mass to the examining finger or under proctoscopic examination. In cases of suspected malignant disease, after col-

ostomy is performed, the size of the lesions can be reduced considerably by very warm irrigating solutions through the lower segment. The true extent of the malignant tissue can then be ascertained. Often seemingly inoperable lesions fixed by the large amount of induration of inflammatory nature, can be so reduced in size as to be operable. Similar treatment is applicable to lesions on the surface.

Not infrequently actinomycosis may cause single or multiple sinuses months after an operation. When possible, sinuses and pockets should be opened up and kept opened. Full doses of iodids are given, as well as radiotherapeutic treatment.

Sinuses from the kidney may be caused by pyonephrosis or hydronephrosis due to obstruction of the ureter or pyogenic infection involving the kidney itself. Sometimes the sinuses result from the drainage of the late abscesses following operations on the kidney. The sinuses may point in the back or loin, or even in the iliac fossa following fascial planes. These perinephritic abscesses are often caused by metastatic infection from teeth and tonsils as was shown by Meisser and Bumpus. Recurring sinuses following incision of abscesses in the abdominal wall may actually be due to diverticulitis. The possibility of tuberculosis is always to be kept in mind when a sinus persists, especially in the region of the neck, breast, axilla, or groin. Tuberculous sinuses in the abdomen show a characteristic, mahogany-colored, cicatrized appearance, and the discharge is watery.

There is always the possibility of sponges having been forgotten. The discharge from such a sinus or wound that fails to heal has a characteristic, opalescent, glistening appearance.

Breaking of the suture.—Ordinary dermal sutures are removed on the seventh or eighth day, except in the case of goiter, when they are removed on the fourth day. When the tissues have been abraded, as for the removal of a small tumor or a section for diagnosis, sutures are left in for ten days providing there is no evidence of retention and the incision is 6 or 8 cm. in length. When the wound has been made in the neighborhood of muscle that is frequently active the sutures should remain in longer because the skin has not been left at rest. The time of removal depends on the site of the incision and the traction of neighboring tissues. Obviously, when a transverse incision has been made in the breast, the sutures must be left longer than when it is sagittal. It often happens that the silk-worm gut is fixed to the tissues by the healing process and will not yield when it is cut; a break will then

result and one-half or two-thirds of the suture be left buried. In most cases these fragments will eventually be surrounded by fibrous tissue and cause no harm. It is better to make the rule of always removing the suture.

When one end of the suture has been cut at the edge of the skin, traction on the other end is maintained. Attempts are now made to loosen the suture. In the case of an abdominal wound this is facilitated by having the patient distend and retract the abdomen alternately. Eventually as the abdomen fills the suture will begin to slip and with the next inspiration it can usually be removed. Should it still be obstinate the patient is told to breathe deeply at intervals until the next day, when no difficulty will usually be encountered in the removal of the entire suture.

Phlebitis.—Phlebitis is one of the most common postoperative complications, especially among women who have borne children and those who have been on their feet a great deal. The patient should be put to bed, and the limbs elevated and wrapped in hot, moist packs until all soreness has disappeared.

Radiodermatitis.—Occasionally after deep treatment with the roentgen ray, especially if the skin is susceptible, erythema appears attended by itching and burning. If the lesion is of the first degree it is usually late in making its appearance, from ten to fourteen days and even longer after treatment. It is nothing more serious than sunburn. Local application of Dodd's lotion allays the itching:

Phenol	1.85 gm.
Zinc oxid	15.5 gm.
Glycerin	4.0 gm.
Lime-water q. s. ad.....	250.0 gm.

In a case of a lesion of the second degree, hychlorite solution, diluted 1:20 may be used, but I have found ambrine dressings quite beneficial. The latter is applied with a sprayer or brush in successive layers with a bed of cotton between. This treatment protects from air and affords relief in most cases.

Occasionally radiodermatitis of the third degree is encountered. The affected tissues become much irritated and ulceration occurs. The area of ulceration is usually evident as early as the fourth day. The lesion should then be thoroughly protected to prevent abrasion of the skin and minimize subsequent loss of tissue. If there is a good blood-supply the necrotic tissue can be excised after fibrosis has been well established. This requires at least from six to twelve weeks. If the tissues can be approximated after the excision, primary healing can be obtained. If the

underlying tissues are not well supplied with blood no attempt should be made to close the wound; it should, rather, be permitted to granulate by the assistance of sunlight and weak hychlorite solution, 1:15 or 1:30 used as a moist application.

Anesthin ointment, 10 per cent, or ambrine can be used as an adjunct to stimulate the growth of epithelium. Balsam of Peru, castor oil, mercuriochrome ointment, or any stimulating ointment which does not produce any untoward symptoms, may be used to promote healing.

MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART I Continued

By J. ARTHUR MYERS, PH.D., M.D.

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MINNEAPOLIS, MINNESOTA

IV. GAINING ENTRANCE TO THE HUMAN BODY

Tubercle bacilli are very numerous since they are constantly being eliminated from the bodies of people and animals suffering from tuberculosis and since they may remain alive for a long time outside the animal body. In order to contract tuberculosis one must come in contact with bacilli from a diseased person or animal. This contact may be direct or indirect. It must be understood that not every one who comes in contact with tubercle bacilli becomes infected. The portals of entry to the human body are the digestive tract, the respiratory tract, the mucous membranes of the mouth, throat, nose, urogenital tract, the skin, and the placenta. Although much has been written to the contrary, sufficient evidence has accrued in recent years to lead us to believe that the digestive tract is as common a portal of entry as the respiratory tract, perhaps even more common. When one considers the large number of possibilities of contamination and how frequently other contaminated objects reach our mouths, it is obvious that most persons ingest many tubercle bacilli. Tuberculosis of the esophagus and stomach is extremely rare. Although this disease occurs more frequently in the intestine, it will be pointed out later that the intestine may serve as a portal of entry without suffering any lesion itself.

The respiratory tract probably is another very common portal of entry. Although much material which contaminates the air we breathe is removed by the especially adapted structures and functions of the upper respiratory tract, it is apparently true that some of this material bearing tubercle bacilli does reach the lung alveoli from which they are admitted to the body.

The mucous membranes of the mouth and nose apparently do not often act as portals of entry.

It is believed that this is due to the fact that so much foreign material comes in contact with these membranes and call forth large numbers of phagocytes, which, when they have ingested the foreign materials including tubercle bacilli, are for the most part unable to re-enter the tissues because of the presence of sticky mucus. Thus they are swallowed or discharged through the mouth or nose. The membrane covering the tonsils affords an exception, inasmuch as there exist deep crypts over the surface. Bacilli which find lodgment in these crypts may be ingested by the numerous phagocytes present, which then return to the tonsillar tissues. Investigators have reported tuberculosis of the tonsils in from 3 to 8 per cent of the cases carefully examined.

The mucous membrane of the eye at times serves as a portal of entry when bacilli, through contaminated hands or other objects, reach the eye.

The mucous membranes of the genito-urinary tract sometimes admit tubercle bacilli to the body. The bacilli may reach these membranes through instruments, such as catheters, or other objects contaminated with tubercle bacilli. Sexual intercourse may also bring about the introduction of tubercle bacilli, as, for example, in the case of a man suffering from tuberculosis of the epididymis or kidney.

Under ordinary conditions the skin is extremely resistant to the tubercle bacillus. In animals, after producing considerable friction of the skin, particularly following shaving, it has been possible to produce tuberculosis by applying to the skin materials containing bacilli. In some instances the disease later appears in the lungs without leaving any trace of its course through the skin or the lymph nodes. In cases of definite abrasions of the skin in both man and animals,

very serious tuberculous disease may develop following the introduction of bacilli through this portal of entry.

The placenta may serve as a portal of entry to the fetal circulation. However, this occurrence is believed to be quite rare, inasmuch as the placenta under normal conditions acts as a barrier, even to leucocytes. If, however, the placenta becomes diseased, leucocytes and even bacteria may be permitted to pass through it in the human family, and this also occurs even more frequently among cattle. It is believed that the placenta may not resist leucocytes and bacteria during the course of certain febrile diseases, such as measles, typhoid fever, scarlet fever, and malaria. It has been pointed out that during the course of labor, if the placenta is ruptured, bacilli from the blood of a tuberculous mother may reach the blood of the child.

In the course of the tubercle bacillus in the human body, Calmette has pointed out that when the tubercle bacillus has reached one of the portals of entry or has been admitted to the tissues it is ingested by a polymorphonuclear leucocyte. Because of its waxy capsule the bacillus is not destroyed. Its host, the leucocyte, may carry it about in the lymph or the blood stream to various parts of the body or cast it off. If cast off another leucocyte will ingest it. It is possible that the bacillus may be cast off through the liver into the bile and eliminated through the intestinal tract without producing any lesion. If this does not occur the bacillus, having produced enough toxin to kill the leucocyte, will be ingested with the dead leucocyte by a large mononuclear leucocyte and will be affected by the proliferation of the bacillus and the resulting toxins. The leucocyte becomes lodged somewhere in the body, and other leucocytes group themselves about it, fuse together, and thus form a giant cell. The giant cell may then be surrounded by many large mononuclear leucocytes and other cells, which become organized into dense connective tissue forming a tubercle about the size of a millet seed. Thus the bacilli in the giant cell are walled off; in other words the newly formed lesion becomes latent. The host has been infected but does not have tuberculous disease. Several things may happen to the very small tubercle now surrounded by leucocytes, epitheloid cells, and connective tissue cells. First, it may remain latent as above described and finally undergo fibrous degeneration, terminating in a healed lesion. Second, it may coalesce with neighboring tubercles to form a conglomerate tubercle, the center of which may undergo degeneration

and the cells and tissues be killed by the toxins, and because of the diastatic or toxin secretions acting upon them undergo a process known as caseation. In this caseous mass tubercle bacilli may remain alive and virulent for many years. While caseation is going on within the conglomerate tubercle there may be marked proliferation of the connective tissue cells taking place outside, thus forming a dense wall which gradually thickens toward the center of the tubercle. This process of organization and fibrosis (spontaneous healing) may continue until nothing is left in the center of the tubercle but a small amount of debris or even a hard, fibrous mass. Nevertheless, in such well-healed lesions virulent tubercle bacilli may be found many years later.

Not infrequently during the process of healing large amounts of lime salts are deposited in the tubercle, and the process is designated calcification. Such calcified tubercles become extremely hard, resembling soft stone, in fact, but even they may harbor in their centers virulent tubercle bacilli for a long period of time.

Unfortunately, not all tubercles go on to healing as described above. On the contrary the resisting forces may not wall off the lesion, and there may be an extension of the tuberculous process into the adjacent tissues as will be described later.

Contrary to former teachings it is now known that the tubercle bacillus is capable of producing lesions without the formation of tubercles. Such lesions have been found in the kidneys and other organs.

Thus we have seen that the tubercle bacillus may pass through one of the portals of entry, be ingested by a polymorphonuclear leucocyte, carried to various parts of the body, finally kill the leucocyte, then, with the dead leucocyte, be ingested by a large mononuclear leucocyte, which in turn transports it from place to place before a lesion is formed. It is evident, therefore, that the primary lesion may appear in any part of the body while no evidence of the course taken by the bacillus is left at the portal of entry. On the other hand, the primary lesion may develop at the portal of entry provided bacilli of great virulence or, in massive doses, are introduced, for example, through an abrasion in the skin, in a tonsil, or in the lungs. From this primary lesion they are carried to the lymph nodes draining the involved region where secondary lesions are produced. If these diseased lymph nodes break down, the bacilli may be carried to the next nodes in the chain, and thus extension of the disease is brought about.

Following the entrance of tubercle bacilli into the tissues of the human body the patient may develop any one of the following conditions: first, tubercle bacillus septicemia; second, miliary tuberculosis; third, latent tuberculosis; fourth, progressive tuberculosis following tuberculous localizations in various organs of the body.

Tubercle bacillus septicemia is not so infrequent as many are inclined to believe. For more than forty years this has been known to be a definite clinical entity. This condition may be primary, but in the majority of cases it is believed to be secondary and resulting from the rupture of a primary latent focus into the blood stream. Such a primary focus may have been in a tracheobronchial lymph node, in the lung, or in some other organ of the body. Tubercle bacillus septicemia has been produced experimentally in the rabbit and the bullock. In some experimental animals the condition becomes entirely cured without the formation of tubercle while in others localization later occurs in certain organs. From these localizations the disease may become latent or develop into a chronic form.

By many it is believed that tubercle bacillus septicemia has frequently been mistaken for typhoid fever or even la grippe because the symptoms of these diseases are so much alike. The differential diagnosis depends upon the absence of intestinal manifestations, the absence of rose spots, and the presence of tubercle bacilli in the blood stream. Moreover, the convalescence is not like that of typhoid in that the patient does not usually quite regain his usual weight and sense of well being. A little later definite symptoms of localized tuberculosis usually develop. Just as in animals the condition may completely disappear or result in localized tuberculosis either latent or progressive.

There is a much more severe form of tubercle bacillus septicemia than the one above described. This severe form is due to a massive infection and may end like the less severe form. However, it frequently terminates in a rapidly progressive disease of the lungs.

Acute miliary tuberculosis is usually due to a large number of tubercle bacilli suddenly entering the blood stream from a caseous focus in some part of the body, such as the lung. The tubercle bacilli are sown throughout various or-

gans of the body where large numbers of miliary tubercles develop. Death usually occurs in two weeks to two months. The duration of the disease depends upon the extent of involvement of such vital structures as the central nervous system and the lungs.

Latent tuberculosis.—We have seen how tubercle bacilli may enter the body, result in the formation of giant cells, and later tubercles. We have seen also that there the development may cease and the entire process enter upon a short or long period of latency. That such latent tuberculosis is extremely common has been proved by numerous workers in various parts of the world. Such latent lesions frequent the tracheobronchial lymph nodes and very often when no evidence of tuberculous lesions can be found in the lungs. With decreasing frequency latent tuberculous lesions are found in the cervical, axillary, and inguinal nodes. Occasionally they occur in the popliteal, cubital, post-auricular, and submaxillary nodes. Although such lymph nodes may have a normal microscopic appearance they may produce virulent tuberculosis when finely divided and inoculated into experimental animals. What has been said regarding the presence of latent lesions of the lymph nodes in man applies also to those of animals, particularly swine and cattle.

Progressive tuberculosis.—Unfortunately, not all early tuberculous lesions become latent. On the contrary tubercles or even groups of tubercles may coalesce. If these involve a good-sized area of lung tissue the caseous material which is formed is large in amount. This may find its way into a ramification of a bronchus and be expectorated, thus leaving a pulmonary cavity in the space it occupied. Around such caseous masses and cavities there usually exist inflammatory areas of bronchopneumonia. Degeneration and destruction are constantly taking place—in short the disease is progressive.

The lungs form the most common site for tuberculous localization in adults. The pleura, probably because of the communication of its lymphatic vessels with those of the lungs, also is very frequently the site of tuberculous localization. In fact the disease may become localized in any organ possessing a lymphatic or blood vessel plexus.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of April 14, 1926

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, April 14, 1926, at 8 P. M.

The meeting was called to order by the President, Dr. H. L. Ulrich. There were 27 members and 2 visitors present.

The minutes of the March meeting were read and approved.

The following members reported cases:

Dr. A. A. Law (Minneapolis) reported a case of "Ventral Tumor of the Sacrum," with moving pictures of the operation:

Tumors posterior to the sacrum are not uncommon and are easily explained, by realizing that coalescence between cutaneous surfaces in the lines of fetal inclusions may pinch off tissue which ultimately may give rise to the simpler dermoids.

Tumors on the ventral aspect of the sacrum are not so readily and easily explained. Tumors in this region may be one of three types—a true dermoid cyst, the teratomata, or the mixed tumor. Other tumors in this region are unusual.

We are indebted to Middeldorf for an explanation of this type of tumor which appears in the sacrococcygeal region. He has shown how early in the life of the embryo the entoderm forms the caudal intestine, the canalis dorsalis and the chorda dorsalis; the mesoderm, the connective tissue, muscles, vertebrae and blood vessels, and the ectoderm the primitive streak, the medullary tube and its vestiges. It has been well shown how the central canal of the spinal cord and the primitive alimentary canal remain patent and communicate around the caudal extremity of the notochord. This patent passage is called the neurenteric canal. Later in the life cycle of the fetus the proctoderm, invaginating to form the cloacal chamber, perforates the gut in front of and above the neurenteric canal opening. When these early fetal canals close, a part of the gut is left behind. With development of the fetus the postanal gut becomes obliterated as does the neurenteric canal. Middeldorf believes, and his belief is accepted, that these congenital tumors occurring in this region can be explained by the growth of the vestiges of the postanal gut and neurenteric canal. This explanation is logical when we consider that some of these tumors must have their origin from all three of the primary fetal layers.

There has been another theory advanced by Adami to explain the preponderance of these peculiar tumors. He believes that the mammal has the same growing points accredited to plants and believes these growing points start at the base of the brain and in the sacral region. He believes that when the nervous system completes its development the growing points stop. He contends, however, that under some exciting stimulus the growth may continue and affirms that the cells have the property of reproducing the three pri-

mary germinal layers. Whether or not his contention is correct, pathologists do not tell us. Most of these tumors in the ventral region of the sacrum are definitely encapsulated. They spring from the connective tissue in front of the sacrum and are readily shelled out. They sometimes are attached rather intimately to the ventral side of the sacrum.

Only thirty cases have been reported to date in the literature. Six cases of the rare chordoma are to be found in the literature. These apparently rise from anlage of the notochord. Eighty per cent of them have been reported malignant. It has been generally considered that ventral sacral tumors are relatively benign, yet a study of the literature indicates that they are so frequently malignant that all of them should be removed. Two of my cases, one reported in 1912 and the other in 1922, had both local and metastatic recurrences. Both patients were autopsied and the recurrences confirmed. Parin collected six cases reported to be malignant, and Pringle, Fowler and Lund have reported local and metastatic recurrences. This makes eleven of the thirty cases reported which were malignant.

The case I have to report at the present time was that of a young married woman, aged 38, whose preliminary history is of little significance. She has had three children, the youngest eleven months ago. She has aborted ten weeks ago. Her menstrual period has been normal. The last period was February 5, 1926. For the last eleven months she has complained of pain in the sacral region which radiates to the back of the right leg. For the past three weeks she has had pain on urination and dribbling of the urine with difficulty in starting her urine. Her stools have always been well-formed and not ribbon-like. She has had no loss of weight.

She entered the hospital on March 3rd, 1926. Examination, both vaginal and rectal, revealed a mass the size of a grapefruit in the hollow of the sacrum. This was fixed, hard and firmly attached outside of the rectum and was not a part of the adnexa. Laboratory studies were entirely negative. Urine, blood and metabolics were negative. The patient was operated upon March 5th, and discharged from the hospital on April 5th.

The operation which is shown in the "movie" which I propose to show tonight reveals the approach of the tumor through the postsacral region, the removal of the coccyx and the lower part of the sacrum. The tumor was opened and drained of sebaceous material, after which its removal was readily accomplished. Sections of this tumor by Dr. O'Brien, University of Minnesota, reveals it to be a cyst of the anterior sacral region with chronic inflammation of the wall. The tissue shows microscopically connective tissue fibres, marked diffuse infiltration with lymphocytes and a small amount of hemorrhage at one end. There is a cross section of a large nerve and the blood vessels are large and thick-walled. No epithelium can be made out.

This is one of the simpler types of cysts in the ventral sacral region which, in this instance, we believe is entirely benign.

Dr. S. E. Sweitzer (Minneapolis) presented a patient with Madura Foot, and gave a report of the case:

"Madura Foot" is a term used to describe a swelling and clubbing of the foot frequently seen on the feet of natives of Madura, India.

The term was introduced by Colebrook in 1846. Vandyke Carter, in 1860, designated the condition as mycetoma. It is a chronic infectious disease due to a fungus infection and characterized by swelling of the part with subsequent disintegration of the subcutaneous structures and the formation of sinuses. These sinuses discharge grains which are black, red, or white. The disease is endemic in certain parts of India, and cases have been reported from Italy, Africa, the Philippines, South and Central America, Mexico and the United States.

Recent articles by Boyd & Crutchfield, Pagenstecher, Lovejoy & Hammack, and Gammel have covered the subject most thoroughly. Gammel et al., in the most recent article, reported the twenty-first case in the United States. Their case was of the black-grain variety and was the second case of that variety reported in North America. This case is then the twenty-second in the United States and the third of the black-grain variety, as black grains were freely found in this case.

Etiology: The mycetomas can be divided into actinomycoses and maduromycoses. The actinomycoses include those in which the grains are composed of thin non-septate filaments without chlamydospores. They may be produced by thirteen different species of the actinomycetes. The maduromycoses are characterized by grains formed by thick septate mycelial filaments with definite walls and frequently forming chlamydospores. They may be subdivided according to the color of the granules. Nineteen different organisms have been described as causing maduromycoses.

We see then that the same clinical appearance can be caused by many different organisms. There is frequently a history of injury to the foot, as many of the patients go barefooted and suffer slight abrasions of the skin.

The following case of Madura Foot is reported from the General Hospital, Minneapolis, and is the first case of this disease reported in Minnesota.

H. J., colored, age 39, admitted to the hospital because of swelling of the foot with purulent discharge. The patient dates his trouble to 1914 when he was working in Texas as a farm laborer. The large toe of the right foot was crushed between two planks. The toe swelled up and then went back to normal size in a few days. The toe felt "dead" until about two years later, when feeling began to return. About the same time the patient noticed a little hard lump under the skin on the dorsum of the great toe. This lump very slowly increased in size. The patient noticed no discharge until two years ago. Since that time he has had an intermittent discharge of pus from several openings in the skin.

X-ray showed slight evidence of destruction in the distal end of the proximal phalanx of the great toe; no evidence of bone production. Bone destruction is probably due to pressure from soft tissue enlargement.

By puncturing the closed sinuses, thick, creamy

pus mixed with some blood was obtained. In this pus were several black, sandy grains of various sizes and irregular shapes. The crushed grains on slide, soaked in 20 per cent sodium hydroxide, under oil immersion, showed branching mycelia resembling thrush fungi. These mycelia appeared very faintly within the reddish-brown background of the granule. Granules, washed in saline and planted on solid media, grew very slowly, showing powder-puff appearance grayish in color.

Dr. J. F. Hammond (St. Paul) reported a case, and showed specimen, of a Hair Ball removed from the stomach of a little girl 9 years old.

A girl, 9 years old, was first seen by me on March 4, 1926. At that time she had what looked like an influenza. She always had been a nervous, delicate child. She had had recurring attacks of vomiting, possibly once a month or oftener from the time she was three years old, but no particular pain. It was noticed from the age of about 2½ years that during excitement she would twist her hair about her finger; then to release her finger she would jerk it away taking the hair along with it. She would then remove the hair from her finger by biting it off.

What the mother was most anxious about was the attacks of vomiting. It was decided to investigate this when she had recovered from the acute infection.

On March 20, 1926, the child was brought to the office. She was fairly well-nourished, rather pale, weight 72½ pounds. The chest was negative. Abdominal examination revealed no tenderness. There was a mass which reached as low as the umbilicus and extended from the left costal margin to the right of the umbilicus. It moved freely with respiration, had a sharp edge, and was not tender. It was first thought to be an enlargement of the left lobe of the liver.

Barium was given and watched with the fluoroscope. The barium could be seen working around the mass in the stomach, taking some time to get to the bottom. Palpation under observation with the fluoroscope made it quite evident that the tumor was in the stomach. Examination six hours after the barium meal showed marked retention, but the barium was not confined to the bottom of the stomach; it was caught in the meshes of the mass. The accompanying picture, taken 22 hours after the barium was given, showed this very well.

On April 8, 1926, the patient was operated upon and a mass of hair removed from the stomach. It weighed 5¾ ounces, and measured 5½x3 inches. At operation, after the patient was under the anesthetic, the tumor disappeared, slipping up under the costal margin, for the first time while she was under observation.

The abdomen was opened by a left rectus incision. The mass was reached with some difficulty; it was found high up under the costal margin and to the left in the cardiac end of the stomach. An opening was made in the anterior wall of the stomach by a transverse incision and the tumor delivered. It appeared to be adherent, requiring considerable traction. The mucosa was more or less reddened and injected.

The stomach and abdomen were closed in the usual way.

April 13, 1926, the patient is making a satisfactory recovery.

DISCUSSION

DR. E. S. JUDD (Rochester): We have seen two of these hair balls in the stomach, though they are not common; one some years back, and the other one just a little while ago. They were in adults; both balls were larger and had been present quite a little longer than in this case.

DR. H. P. RITCHIE (St. Paul): I think that picture is quite worthy of intimate study. About twenty years ago I saw a picture similar to this in one of the eastern clinics. The case was quite carefully followed at the time. When I saw this picture I recalled the other case, and said this was hair-ball.

Dr. Oscar Owre (Minneapolis) reported a case of Pelvic Tumor found in a male who had just recovered from prostatectomy:

I wish to report briefly quite an unusual and extraordinary pathological entity I found in a patient who had just recovered from a prostatectomy. The prostate was removed successfully and the patient made an uneventful recovery. Six weeks after operation he developed an excruciating pain in the left lower quadrant of the abdomen, the temperature at one time running to 106° with chills. He came back to the Swedish Hospital. On catheterization we found no residual urine. The urine was clear with a few leucocytes in it. Upon cystoscopic examination the left kidney showed no secretion and it was impossible to introduce the catheter into the left ureter. We x-rayed the patient and found this peculiar picture. There is a stone in the lower portion of the ureter. Then in attempting still further to introduce the ureteral catheter, it passes the stone and, instead of going up to the left kidney, it passes across laterally to the opposite side of the pelvis at a distance of 6.5 centimeters to this point (shown on x-ray plate). At this stage of the examination we aspirated the ureteral catheter and removed 4½ ounces of thick purulent urine. A pyelogram was made and the following x-ray picture was taken, and we found we had a pelvic kidney. His temperature dropped, but so far he has not allowed me to take out the pelvic kidney.

Dr. A. Schwyzer (St. Paul) reported two cases, as follows:

1. Blue Gall-stones. Several gall-stones were shown. The largest one among them shows an extraordinary feature in that it is blue. The question is, what is it due to? There is a case known where an absolutely blue stone, made of indigo, was found in the kidney. Indigo must come from indican which is a glucosid of indigo. Indican originates from intestinal putrefaction, i.e., where we have a coli infection. We might have had coli infection here in the gall-bladder, which gave us the indigo. Indigo forms sometimes in the body; for instance, sweat under the arms may be blue; it is one form of chromidrosis, and the substance which gives this bluish color is indigo. I do not know if blue gall-stones are described anywhere in the literature, but have not had a chance to look this up closely. The stone is not all blue; only one

layer of it is blue; the other part of it, and all the other stones, are yellowish brownish.

2. Hydrocephalus. This is a case of a baby five weeks old, referred to me by Dr. Rosenholz. It was a high forceps delivery. Soon after birth the child started to have signs of hydrocephalus and the head increased in size rather rapidly. The greater fontanelle is very large and there is a large membranous communication with the lesser fontanelle, about 2 cm. in width. The lesser fontanelle also is widely open. The child had not gained any in weight and was even losing weight rapidly, as projectile vomiting had set in. We thought it was necessary to interfere surgically.

A sagittal incision was made just back of the coronary line and about 2 cm. to the side of the midline. A small opening made into the dura allowed us to insert a female catheter, which followed the falx downward and penetrated the corpus callosum. Out came clear fluid, which had distinctly been under pressure, while twice before a spinal puncture had only yielded one or two drops of fluid. After about half an ounce of clear fluid had escaped, the opening in the catheter was held closed. After a little while another half ounce was allowed to escape. The child was kept all the time in a half-sitting posture. We then withdrew the catheter in order to thread it with catgut, which was to be left for drainage. As it was too soft, we inserted a kangaroo tendon through the catheter into the ventricle and pushed the outer end of it under the galea. The skin was then closed. This was done on April 9th.

About two days later we noticed, when the child was taken up, that there was a splashing noise in the head, and in shaking the head it was made clear that air had entered. It was thought advisable to make use of this occurrence for ventriculograms in order to see if the brain was normally formed and to get a possible further information as to the cause of the hydrocephalus. From the x-ray pictures we can see that the configuration of the brain appears normal. (Several x-ray pictures were shown.) The lateral ventricles were well-outlined, proving that both foramina of Monro were patent. On taking a picture with the head down, the air was seen to have gone through the aqueduct of Sylvius into the great cisterna. Considering the fact that Dr. Rosenholz got hardly any fluid by repeated spinal punctures, the pathology in all probability is therefore right here at the foramen magnum, consisting of a closure of the communication between the cisterna magna and the spinal subarachnoid spaces and also those of the brain surface.

I am glad to say that the child has picked up nicely, has not vomited any more, and has started to gain.

DISCUSSION

DR. W. A. JONES (Minneapolis): Dr. Schwyzer's report of this case recalls to my mind a man who was under my observation twenty years ago. He was about forty years old at the time, and was a man who was highly cultured, spoke several languages, and was considered an expert accountant. He was well-built but had a chronic hydrocephalic head. During a typhoid epidemic which was prevalent in Minneapolis at that time he died from the fever, and on account of his hydrocephalus we secured a postmortem. Our findings were rather

amazing. He had a large shell of cortex and the interior was practically filled with fluid; that is, there was no delineation of ventricles and the basal ganglia were in their proper place at the bottom of the cavity. There must have been some fibrous parts from the cortex down through the shell of the brain to connect with the spinal cord and other mechanisms. This man was not in any way warped as to his mentality and yet he had an unusual pathological hydrocephalus.

It seems, therefore, safe to conclude that a man may go on his way or do and accomplish unusual things with very little brain substance; that so long as he keeps his gray matter intact and it connects with other and deeper segments in the brain and the spinal cord, it seems to make but little difference how much fluid his brain contains.

DR. F. W. SCHLUTZ (Minneapolis): The case Dr. Schwyzer reported, I saw the sixth day after birth. The child had vomited a good deal and had not had fluids. The picture presented at that time was one of extreme dehydration. The head was very small, the fontanelle was very much sunken, and the child was in a stupor. That was the most pronounced symptom at this time. The size of the head seemed rather below normal. I can recall there was a factor in the case which pointed to a constitutional phase. The parents denied specific trouble. A previous child had died. I think that birth occurred about five or six years before this baby was born. There was some element in the case that worried the parents a good deal, but I do not recall now just what it was.

DR. A. C. STRACHAUER (Minneapolis): On account of the very free communication between the ventricles as demonstrated in Dr. Schwyzer's case, I should feel that prognosis was extremely good.

About seven years ago Dr. Midelfart, of Eau Claire, brought me a case of hydrocephalus in a baby six or seven months old. I operated upon the child as described by Dr. Schwyzer but using the Cushing aspirating probe instead of the catheter used by Dr. Schwyzer. Reports have been received at frequent intervals from the child's parents, and within the past year Dr. Midelfart wrote me that the child, now nearly eight years old, walks two miles to school each day and is developing normally, both physically and mentally.

DR. SCHWYZER (closing): I only want to add that when it comes to activity of the brain and mental power, a moderate hydrocephalus does not signify inferiority. Astronomers, physicists and mathematicians have had the largest and heaviest brains. One of the greatest physicists that Germany ever had was Helmholtz, and he had a very outspoken hydrocephalus when he was a child.

This puncture of the corpus callosum is really a very simple thing.

Dr. A. C. Strachauer (Minneapolis) reported a case of Complete Laryngectomy for Intrinsic Carcinoma of the Larynx, and showed the patient.

Chas. B., aged 57, had complained of a progressive, painless hoarseness of eight months' duration.

Laryngoscopic examination disclosed a lesion involving the right vocal cord, giving the character-

istic cord fixation. His history, physical and laboratory findings were otherwise unimportant. The clinical diagnosis was confirmed by a biopsy which showed the lesion to be a squamous celled carcinoma.

A three-stage complete laryngectomy, following the Crile technic, was performed as follows: on January 2nd, under ether anesthesia, the larynx and upper trachea were exposed and skeletonized after dividing the isthmus of the thyroid gland and by freeing the attachment to the esophagus posteriorly. One week later, on January 9th, under local anesthesia, a tracheotomy was performed. On January 20, under ether anesthesia administered through the tracheotomy tube, the larynx was completely removed and the opening in the hypopharynx closed by two superimposed suture lines.

Several days before the last stage of the laryngectomy, a duodenal tube was placed so that the patient would become accustomed to its presence and to duodenal feedings.

Convalescence was uneventful and the patient has made a perfect recovery.

Carcinomata of the larynx are classified as (1) Intrinsic, when below the level of the true vocal cords in the subglottic zone; and (2) Extrinsic, when above the level of the true vocal cords in the supraglottic zone.

Intrinsic carcinoma manifests itself by chronic progressive hoarseness, and may be recognized early on laryngoscopic examinations. It is one of the most curable of cancers if treated early and radically, giving cures in 65 to 70 per cent of the cases. (MacKenty.) While the larynx is placed deep in the neck the lesion is, nevertheless, a surface lesion and in this respect compares favorably with skin cancer. The lymphatics of the vocal cords are scanty and the cartilaginous walls of the larynx are extremely resistant to malignant permeation, thus constituting a barrier to extension and confining the lesion.

Patients who have had total laryngectomy performed live comfortably, work, eat, smoke, whisper audibly, and some of them learn to swallow air which on eructation permits them to speak audibly. Some patients are able to talk over the telephone and count from one up to twenty on one stomachful of air. There are several types of artificial larynx; one, devised by Dr. J. E. MacKenty, with rubber vocal cords, is quite satisfactory in producing phonation.

The one-stage operation is performed by a few operators, but the majority of surgeons, led by Crile, carry out the several-stage technic, which has a lower mortality and the following advantages: (1) The magnitude of the operation is divided; (2) By skeletonizing the larynx and trachea and packing off the tissues of the neck, nature establishes a granulation tissue barrier to the extension of infection into the mediastinum after the trachea is opened. This infection in the mediastinum has been one of the principal causes of death; (3) The preliminary tracheotomy results in fixation of the trachea before its division, thus preventing its moving up and down on inspiration and expiration, giving a pump-like action which sucks infection into the mediastinum; (4) In the final stage of the operation the patient may be etherized through a rubber tube which snugly fits into the tracheal opening, thus preventing the entrance of blood and mucus into

the trachea and thereby protecting the patient from pulmonary infection and pneumonia, which, again, have been large factors in the post-operative mortality.

In the past, radium has been of value only as a means of palliation in hopeless cases. Recent developments in the use of radium in these cases offer hope of improvement, but the results, as yet, are not established.

(2) Dr. Strachauer demonstrated an instrument which he had devised for the introduction of radium emanation seeds into the substance of malignant tumors.

Twenty or thirty of these seeds frequently are imbedded in a tumor and, according to the present technic, are placed in a hollow needle and deposited with a stylet, one at a time.

Dr. Strachauer's instrument is devised on the principle of the repeating rifle, with a magazine containing thirty seeds. The needle is introduced into the substance of the malignant lesion and the entire contents of the magazine are ready for depositing, one at a time, without removal of the instrument. This results in the infliction of less trauma and in more even distribution of the seeds throughout the lesion, since the orientation is not lost as happens in the removal and re-introduction of the single needles as commonly practiced.

Radium was first used as a surface application. Later, in certain types of lesions, radium element in suitable containers, needle in form, were introduced into the tissues. This is termed the intratumoral application. Since the action of radium on tissues is always through the medium of its emanation, Duane, while working in Paris, suggested its imbedding in capillary glass tubing cut in short lengths and termed seeds. This method was further developed by Janeway and has been extensively used at the Memorial Hospital in New York City. Due to the more even distribution of the radium throughout the tumor mass this method gives greatly improved results, notably in intraoral cancer.

Radium and the emanation both give off alpha, beta and gamma rays. The alpha ray is an extremely short ray and is filtered out by even a thin layer of paper and is practically negligible. The beta ray is an extremely caustic ray and is responsible for necrosis and sloughing of tissues. The gamma ray corresponds to the therapeutic x -ray wave, and is the desirable therapy ray. Glass capillary seeds filtered out the alpha ray but not the caustic beta ray; therefore, Dr. Failla, physicist at the Cancer Memorial Hospital, New York, suggested the use of gold capillary tubes, instead of glass, which gold would filter out the undesirable beta ray.

Dr. Strachauer's instrument is devised for the imbedding of the gold capillary tubes containing radium emanation. These tubes are deposited throughout the tissues of the lesion; one tube containing one millicurie of emanation, which is the equivalent of one milligram of the radium element, being imbedded to every cubic centimeter of tissue. The action of the emanation continues over a period of about five and a half days, after which the small gold tube remains encysted in the tissue and becomes absolutely innocuous.

Dr. H. P. Ritchie (St. Paul) showed lantern slides of a case of skin grafting over the hip after the leg had been amputated.

Dr. H. L. Ulrich (Minneapolis) showed x -rays of an enormously dilated esophagus in a patient who had had cardiospasm for about thirty years.

Dr. E. T. F. Richards (St. Paul) gave the paper of the evening, entitled "Infectious Mononucleosis." Numerous charts and slides were shown.

DISCUSSION

DR. CROSS (Minneapolis): Dr. Richards has beautifully presented this subject. I shall not attempt to say anything about the hematological side as there is nothing more to say. From the clinical standpoint there is a great deal that is open to discussion. Dr. Richards believes the condition to be a clinical entity which can be diagnosed by a peculiar blood finding. Leaving out of account the earlier cases of glandular fever which were not accompanied by blood studies, we can generalize thus far, that the cases described by competent observers have these things in common: in the first place there is the adenopathy, with temporary enlargement of the spleen. So far as known, this adenopathy has not persisted. Second, there is not a progressive increase in the leucocytosis. Most of the cases run from normal to 30,000. Third, they recover. There are probably, in the hands of expert hematologists, diagnostic changes which can be depended upon in the form and staining of these cells. However, these cells are not always present in the cases which otherwise may be included in this group. They are, when present, probably recognizable by careful search. One point which has been quite evident in reading over the descriptions of the Johns Hopkins and other cases is that there has been a certain epidemicity that cannot easily be explained. Another point is that they occur at quite a wide range of ages, up to 30.

The interest to the clinician is the question or problem of whether or not we have a distinct clinical entity or disease, or whether we have lymphocytosis and the occurrence of adenopathy in certain infections which are not otherwise to be differentiated from cases which do not show these blood changes or adenopathy. This question must be considered as yet *sub judice*. Cabot's studies were made on acute infections in which streptococci predominated. So far as known, no new infectious agent has been found in these cases. In favor of the disease being a clinical entity are:—these peculiar and fairly uniform blood findings, the fact that it shows a uniform lymphocytosis and adenopathy, and that all cases recover. As against that is the fact just stated, i.e., that we have infections similar to these lasting about the same time, due to the same infectious agent, but without the blood changes, adenopathy and lymphocytosis; rather a polymorphonuclear leucocytosis. Turck, who was an authority on blood work, contended, I think, with others, that acute lymphatic leukemia is an infectious process and while he did not state what he considered the infectious agent to be, he felt that

all the diseases which show these blood changes must be due to infection.

The etiology of the cases in this group is most interesting. The question, for instance, whether it is possible that an infectious agent at one time may cause one set of blood changes and at another time another, or none, due to some peculiar characteristic of the infectious agent. Second, whether there are certain individuals who react in a peculiar or unusual way to a given infectious agent.

There is abundant clinical and experimental ground for the hypothesis that a given strain of bacteria can, through cultivation in the body, acquire a selective capability of attacking certain tissues. The same organism may, after passing through other cultivations, leave alone the tissue formerly attacked and find lodgement and grow in entirely different tissues, or produce quite different reactions in the body.

It is a most interesting condition upon which the last word has not been said.

DR. GIFFIN (Rochester): Much of my work is in connection with diseases of the blood, and I am therefore especially interested in Dr. Richard's paper. It covers the subject in an unusually complete manner. The first case, in which there was bleeding from the gums, would very strongly suggest leukemia, and the fact that it did not prove to be leukemia is consequently very instructive. In our experience infectious mononucleosis is rarely seen. I have in mind only two cases of this condition that eventually recovered. One patient's blood returned to normal in about six months. Many cases of various types of infection with high leucocyte count and high lymphocyte count have been seen, and we have been inclined to regard infectious mononucleosis as a more severe reaction of a similar type of infection. In general, when the lymphocyte percentage is below 80 per cent, the burden of the proof is upon the physician who makes the diagnosis of leukemia, and when the lymphocyte count is above 90 per cent the burden of the proof is on the physician who makes a diagnosis of infectious mononucleosis. The most important thing, however, is the careful study of the blood smears and the finding of definitely immature cells. It will be very interesting to follow these cases for a longer period of time and to learn what happens later in life, especially to see whether there is any later return to the leukemic type of reaction.

The meeting adjourned.

—JOHN E. HYNES, M.D.
Secretary.

BOOK NOTICES

BONE SARCOMA: An Interpretation of the Nomenclature Used by the Committee on the Registry of Bone Sarcoma of the American College of Surgeons. By E. A. Codman, M.D., Registrar. With 24 illustrations; cloth, \$2.00. Paul B. Hoeber, Inc., New York. 1925.

Until recently our knowledge of bone sarcomas has been in a rather chaotic state. Attempts at their study, though some were made by brilliant men, lost much in value for two reasons: In the

first place, the nomenclature and classification of bone tumors have been so complex and varied, as given by different authors, that students have found it impossible to bring together the case-reports of different authors. The collection of the various reports is important because sarcomas of bone are so uncommon that no one man or clinic can collect a large number. In the second place, as our knowledge increases, the older case-reports lose value through changes in our views. Until recently there has been no one repository for the material for re-study of such cases.

Realizing these two impediments to the study of bone sarcoma, Dr. Codman, with the help of Drs. Ewing and Bloodgood and other pathologists and surgeons, instituted a registry of cases of bone sarcoma. The Registry was made one of the activities of the American College of Surgeons, with Dr. Codman as chairman of the committee. A nomenclature and classification of bone tumors has been developed, and a museum established for the collection of specimens, microscopic sections, roentgenograms, and clinical histories.

The present small volume sets forth the Registry's present classification of bone tumors with illustrative case-reports. It is hoped that the book will find a place in laboratories and hospital libraries where it will be available for reference in connection with each new case of bone tumor as it appears. The text is concise and well written; the illustrations are excellent.

The author emphasizes that the classification is open to constructive criticism. He hopes that surgeons and pathologists will help by registering their cases and by presenting the follow-up records. It is noted that, if a hospital staff will co-operate by registering its cases, then the committee will be willing to send to such hospital boxes containing data of about ten registered cases at a time for the review of its surgeons, pathologists, and roentgenologist.

This little book should be a source not only of information, but of inspiration as well.

—T. H. SWEETSER, M.D.

EYE, EAR, NOSE AND THROAT MANUAL FOR NURSES. By Roy H. Parkinson, M.D., Visiting Oculist and Aurist to St. Joseph's Hospital, San Francisco, California. Cloth. Price, \$2.25; pp. 207 with 51 illustrations. St. Louis: C. V. Mosby Company, 1925.

The author states that there is no book available for a class-room work that may be used in nurses' training schools. He says, further, that it is not his intention to train nurses to make accurate diagnosis or to prescribe; but to train them to get a general idea of eye, ear, nose, and throat conditions, so as to enable them to better follow the directions given them by the doctor.

The work is divided into three main parts:

The first part has to do with anatomy, physiology, and diseases of the eye, ear, nose, and throat.

The second part is given to illustrations of operations and the selecting of the instruments used.

The third part has to do with the public-health problems related to the nurse's work.

This volume fills the need and covers the subject very thoroughly.

—E. A. LOOMIS, M.D.

THE JOURNAL-LANCET

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THE TREASURY DEPARTMENT TO PRACTICE MEDICINE

Based upon an effort to strengthen the Harrison Narcotic Act, a bill has been introduced into the Senate, and introduced into Congress on April 24, 1926 (Senate Bill S 4085), at the instance of the Treasury Department. The purpose of this bill, says Secretary of the Treasury Andrews, is "to clear up certain points which have been raised in certain courts to the disadvantage of the government." As a matter of fact, this bill is introduced to disturb and muddy the efforts of the states and the physicians of the states in carrying out the original idea of the Harrison Act. There is no clearing up about it at all. It simply increases the work and distributes the responsibility, not to the government or its agents, but for the physicians, pharmacists, veterinary surgeons, and others who are permitted to dispense or prescribe drugs containing narcotics.

It would seem that some of the points in the law were simple and easily carried out. The first point requires collectors of internal revenue to refuse registration to physicians whom they believe narcotic addicts. That is all very well so far as it goes; but is it the government's business to do that or is it the State's business? Who is best fitted to decide who may prescribe, administer, or dispense narcotic drugs? The U. S. Supreme Court states the case thus:

"The declared object of the Narcotic Law is to provide revenue, and this court has held that whatever additional moral end it may have in view must 'be reached only through a revenue measure and within the limits of a revenue measure.' Congress cannot, under the pretext of executing delegated power, pass laws for the accomplishment of objects not entrusted to the federal government * * * *. Obviously, direct control of medical practice in the states is beyond the power of the federal government. Incidental regulation of such practice by Congress through a taxing act cannot extend to matters plainly inappropriate and unnecessary to reasonable enforcement of revenue measure.—*Linder v. United States*, 268 U. S. 5, decided April 13, 1925."

This paragraph seems to decide very clearly that the States are able to take care of their own matters much better than the federal government, even though the collectors believe that some physicians are narcotic addicts. However, it is fair to assume that physicians who are discovered to be addicts should not be permitted to prescribe narcotic drugs. The second point requires pharmacists to determine whether physicians' prescriptions were or were not issued in the course of professional practice and to refuse to fill such as the pharmacist may reasonably suspect of having been improperly issued. The clause in the new bill is wholly out of line with the practice of medicine and should have absolutely no bearing and should be protested to the uttermost, and it is not really a subject for discussion except in condemnation. The third point compels physicians to keep records of every dose of narcotics dispensed by them except such as may be dispensed in emergency cases. Part of this law has been in force for some time, and it is a tremendous nuisance; but evidently doctors are trying to live up to it, although it increases their bookkeeping and involves a good deal of additional work in keeping records. And if a man forgets one time whether he has left a narcotic drug with a patient, he is liable to censure, fine, or imprisonment by the state internal revenue collectors. The fourth point forbids the ambulatory treatment of narcotic addicts, which, in the judgment of the writer, is a wise thing to do as all ambulatory cases, in adults, who are known as addicts should be put in a hospital, kept under lock and key supervision, and have their drugs taken away from them—not as difficult a matter as one might think; and they should be kept under direct supervision long enough so there may be a prospect of a cure. Incidentally, there are very few real addicts who are cured of anything.

The fifth point requires physicians to keep records of all purchases of so-called exempt narcotic preparations. That, of course, is not a difficult matter because the average physician keeps his bills and can refer to them at any time. The sixth point calls for denying registration for a period of from one to two years to any physician convicted of any violation of the Harrison Narcotic Act. There is no objection to that at all; if a man is going to gain his livelihood by dispensing narcotics he can get along without practicing medicine.

South Dakota has started the ball rolling, as will be noted in our issue of June first, in a letter from Dr. C. F. Morsman, of the Hot Springs Clinic, Hot Springs, S. D. We heartily endorse what has been said before, and it is time that something was done really to effect a cure for the Harrison Act. The attempt to regulate the distribution of drugs is about as successful as the regulation and distribution and taking of liquor; and if the government undertakes it under the direction of the Treasury Department it will have an enormous force in the field who will work just as inefficiently as do the officers who attempt to subdue boot-legging. That would mean an enormous cost to the government and a renewed conflict between physicians who are trying to do their duty and government officials. Evidently the bill is not 'destined to go through. If it does it will create a pretty situation.

The medical profession has been carrying burdens enough without having an unwise and burdensome amendment attached to the Harrison Narcotic Law. The remedy for the narcotic situation lies in the hands of the government, but it is probably not applicable. It has been suggested that the government take over the importations of all narcotics, distribute them through government agents to licensed practitioners, men who are licensed to practice medicine, whether it be human or veterinary, and pharmacists. In this manner all narcotics can be sold at a very low figure. The government can, if it chooses, fix a price for its sale and thus put the narcotic boot-legging agent out of business, as he finds there is no profit in selling narcotics to addicts and will soon seek other fields. But, again, the question comes up as to who could administer a law of this kind successfully. It may be that it can be done in a half century, but not less,—because some other way will be found to evade the law, and the government will feel illy disposed toward employing another large army of internal revenue agents to carry out the work which the State is amply able to handle itself.

THE NORTH DAKOTA STATE MEDICAL ASSOCIATION MEETING

The thirty-ninth annual meeting of the North Dakota State Medical Association was held at Minot, with a registration of about 135 men. It often happens that all of the men who attend state meetings do not register, for some reason which is hard to explain. However, the meeting was well organized and went off in proper spirit. The committees in charge of the affair certainly did a great deal of work to make the meeting a success.

The scientific program was under the direction of Dr. A. J. McCannel—"Archie," as everyone knows him. The arrangements and place of meeting were under the direction of Dr. E. M. Ransom, while Dr. Knapp, as chairman, had charge of the registration and badges. The banquet, which was a very notable success, was cared for by Dr. J. R. Pence, Dr. J. L. Devine, and Dr. A. J. McCannel who is secretary of the State Association. The hotel reservations were under the care of a separate committee, as was the reception.

North Dakota invited a number of celebrated men who gave papers or addresses.

Dr. J. Stuart Pritchard, of Battle Creek, Michigan, was one of the favored guests, and his first address was on "Chest Conditions: Use of Iodized Oil in Diagnosis and Treatment of Bronchial Affections." He showed a number of lantern slides which illustrated very graphically his presentation and his success in his treatment of bronchial affections.

Dr. David A. Stewart, of Ninette, Manitoba, gave a very inspiring talk on "Septic Infections," with the use of x-ray plates. He added much to our knowledge of the subject by showing how numerous infections other than tuberculosis are responsible for many chest conditions. Dr. Herman Kretschmer, of Chicago, gave a genito-urinary address with clinical lantern slides,—a very interesting exposition of his topic and given in his usual spirited manner.

Dr. Arthur Sweeney, of St. Paul (He was referred to by the Fargo papers as Dr. MacSweeney, which shows how close the public gets to a public man, often making mistakes that are amusing, if not informative) read a very interesting paper on "The Doctor and the Personal Injury Claimant," which will be published in *THE JOURNAL-LANCET* before long, as will the other papers. This paper was the subject of general discussion.

Dr. O. W. Rowe, of Duluth, was one of the guests and gave a pediatric clinic.

Dr. Emil S. Geist, of Minneapolis, talked on "Injury of the Wrist Joint," and used lantern slides to illustrate his subject, in his usual way.

Dr. W. H. Lewis, of St. Paul, talked on "Inflammatory Affections of the Middle Ear: The Responsibility of the General Practitioner."

Dr. Walter D. Sheldon, of Rochester, was scheduled for a clinic, but instead of that gave a very illuminating discussion on the fifth nerve.

Dr. Arnold Schwyzer, of St. Paul, gave "Surgical Experiences with the Pharyngolaryngeal Area," with lantern slides.

Dr. E. T. Bell, the University of Minnesota pathologist, together with Dr. S. Marx White, of Minneapolis, gave a very scholarly exposition of "Hypertension," and it is presumed that almost every man in the audience had his blood pressure taken immediately afterward, some of them feeling it extremely low and others perhaps fearing it was unusually high, a state of mind, largely, but when associated with other things quite necessary to keep in mind.

Dr. Olin West, secretary of the American Medical Association, was unable to be present, but he sent his very able representative, Dr. John Dodson, whose name is familiar to medical men all over the Northwest.

Owing to the illness of Dr. John Rindlaub, the president of the Association, Dr. Thomas Mulligan, of Grand Forks, presided until the installation of the new president, Dr. N. O. Ramstad, of Bismarck.

Minot is a peculiarly located city of between 14,000 and 15,000 inhabitants, in a valley surrounded by wonderful hills and the Mouse River, which comes down from Saskatchewan, roams around through Minot, turns upon its course and goes back to Manitoba; but it leaves in Minot well-nourished parks, and Minot has had the good sense to leave its park system largely to Nature. They have drives throughout both parks, and the visitors were given an opportunity of seeing the valuable city assets and also the great bronze statue of Theodore Roosevelt on horseback, which was given to the city by Dr. Henry Waldo Coe, who was the second president of the North Dakota State Medical Association (in 1890). This statue of Roosevelt is quite effective, standing on rocks from the Bad Lands, his old hunting place. One park, Roosevelt Park, has a wonderful zoological garden, and a community swimming pool. The whole city and the parks are surrounded by the beautiful hills on which one can drive and from which one sees the level country of that part of North Dakota

which extends from there over the borderline into Canada. Minot also has wonderful hotel accommodations, and they took care of their guests and visitors without any difficulty.

The banquet at the leading hotel, the Leland, was held on the first evening of the first day of the meeting, and was presided over by Dr. A. J. McCannel in his usual cordial way. One of the principal speakers of the evening was Dr. Arthur Sweeney, of St. Paul, who gave his impressions of South America and all who heard him were envious that they had not been privileged, too, to visit South America. One cannot leave the subject of the banquet without referring to the address given by Dr. F. R. Smyth, of Bismarck. He is always at the State meeting, and he never fails to make an impression with his genial, cordial, Scotch manner. Neither can we neglect to thank him for his charming entertainment, given at the Leland Hotel, after the banquet. Although he seems elderly in appearance, he is still a young Scotchman, full of pep, stories, and ginger. Dr. James Grassick, another young Scotchman, of Grand Forks, handsome and genial, added dignity and mirth to the banquet. He, too, is ever-present and always the same genial, kindly man, radiating good cheer.

The next meeting of the Association will be held at Grand Forks, North Dakota.

"SOME INFANTILE FACTORS IN THE ETIOLOGY OF HYSTERIA"

This is the subject of a paper which the editor heard at the Neurological Section of the American Medical Association at Dallas, in April. The paper was written by Dr. M. S. Gregory, of Oklahoma City. A brief abstract of this paper will probably illuminate the text: "Hysteria is always the reactions of the infant. If an individual wins by abnormal conduct as a child, he or she will win, if possible, by abnormal conduct as an adult. If the child has been trained to meet reality then as an adult he or she will meet reality and remain well. The individual repeats in adulthood the action pattern established in childhood."

It seems to us this explains a great many of our difficulties in the treatment of human beings. We are too lax in our methods of investigation to go back and find out in the history of the individual why, as an adult, he behaves and conducts himself as he does. This does not require deep investigation, it simply requires the getting of a simple, plain history from some reliable member of the family, and it often settles the whole ques-

tion in diagnosis. How many times we see people who complain unnecessarily, perhaps, of a collection of symptoms which have no pathological foundation and which are simply inherent traits that have grown with the individual from the infant to the man. This state of affairs may sometimes account for the surgical operations which are done on people for the relief of certain symptoms which seem as if they had a pathological basis. Patients are operated on from head to foot for everything, from enlarged tonsils to ingrowing toenails, for the relief of complaints that are largely domestic or acquired through the abnormal methods of thinking in the adult. This, perhaps, is quite a broad statement, but it can be verified if one will take the pains to inquire into the many factors which enter into the complex life of the individual.

The neurologist sees more of these people, perhaps, than do other specialists. And he has grown to learn that the family history, the inherent tendencies, the bad environment of the child with its improper bringing-up or its lack of bringing-up and lack of training and discipline, and its lack of resistance to the ordinary strains of human life, eventually lead to a complexity of things which, seemingly, is very difficult to explain and in reality ought to be differentiated without much trouble.

The question is what to do with these people, these adults. Most of them have acquired a bad habit of conduct, of action, of judgment, of reason, of which they have very little. What can you do for such patients? How is it possible to relieve them? By careful analysis of their life-long complexities, and explanation of why they conduct themselves as they do, and why they have grown into bad ways of thinking. Tell them why they have so little resistance, and, if necessary sometimes, tell them they are not responsible for it,—that their symptoms are inborn, inherent, founded on heredity, and tintured by a bad environment. Very often this sort of frank explanation will relieve some of their fears, but most often it drives them from one physician to another through whom they seek relief.

The remedy really lies in proper care during the growing period of childhood. Yet it is notorious that the care the child gets in the present age in the management of homes is negligible. They naturally follow the line of least resistance, and do pretty much as they please,—with the uncomfortable result that they are destined to be psychoneurotics until someone who has the grasp on the situation can change the current of their lives and at least make them more comfortable and less disturbed.

NEWS ITEMS

Dr. Harry H. Aldrich has moved from Orient, S. D., to Hitchcock, S. D.

Dr. H. W. Grant, of St. Paul, has returned from a stay of six months in the European clinics.

The next annual meeting of the South Dakota State Medical Association will be held at Huron in 1927.

Drs. E. V. Goltz and Alfred Hoff, of St. Paul, have returned from six months' graduate work in Vienna.

Dr. F. R. Croson, of Proctor, for several years on the staff of the Mesaba Hospital, has moved to Kansas.

Dr. Chester J. Olson, of Belle Plaine, was married last month to Miss Alyce L. Forslof, of Minneapolis.

Dr. James M. Flinn, of Helena, Mont., was married last month to Miss Kathryn Meagher, of Bute, Mont.

The next (1927) annual meeting of the North Dakota State Medical Association will be held at Grand Forks.

Fillmore County has refused to join Olmsted County for the building and maintenance of a tuberculosis sanatorium.

Dr. N. H. Gillespie, of Duluth, who has been in Europe for several months, is now in Vienna and will return home early in July.

A charter has been granted the Memorial Hospital at Langdon, N. D., and the city will vote soon on the subject of a building for the hospital.

The work of raising funds for a new addition to St. Joseph's Hospital of Mankato, is progressing satisfactorily, and the new wing will be built.

Dr. Gordon R. Kamman, who has been studying for the past year in Europe, and is now at Johns Hopkins Hospital for special study, will be home July 1.

Dr. John L. Shellman, of St. Paul, was elected president of the Minnesota Academy of Ophthalmology and Oto-Laryngology at the annual meeting of the Academy last month.

North Dakota raised over \$24,000 in 1925 from the sale of Christmas Seals, which is a gain of more than \$5,000 over 1924; and every dollar of this large amount is expended wisely.

Dr. F. E. Harrington, Health Commissioner of Minneapolis, will maintain three stations in

the city during the summer for vaccinating children against diphtheria and scarlet fever.

Dr. Howard H. Bennett, of Deadwood, S. D., a recent graduate of Loyola, who was doing interne work at the Cook County Hospital, Chicago, died last month, probably from heart disease.

The preparations for the annual meeting of the Medical Association of Montana, to be held in Billings on July 16 and 17, give promise of an excellent meeting, interesting and profitable to all who attend.

Drs. A. A. Law, of Minneapolis, and H. P. Ritchie, St. Paul, were the only Twin City men to attend the American Surgical Society at Detroit last month. Dr. Law was elected vice-president of the Society.

Dr. J. T. Schlesselman, of Mankato, has returned from a trip to Europe. He spent two months in the clinics at Vienna and speaks highly of the instruction given there and of the abundance of clinical material.

Dr. B. F. Simon, City Health Officer of St. Paul, is to be chief of staff of the new Roosevelt Hospital of that city, which will be ready for occupancy in August. The hospital will have a capacity of eighty-five beds.

Dr. H. McI. Morton, of Minneapolis, an eye, ear, nose, and throat specialist, was invited to deliver the dedicatory address when the Crown Prince of Sweden laid the corner-stone of the John Morton Memorial building at Philadelphia on June 2.

Dr. William M. Sweney, of Red Wing, died on the first of the month at the age of 77. Dr. Sweney was a graduate of Bellevue, New York, class of '76, and had practiced in Red Wing since graduation. He was health officer of Red Wing several years.

In his presidential address before the South Dakota State Medical Association, Dr. W. R. Ball, of Mitchell, related some exceedingly interesting historical facts in connection with the early days of the Association, and he made a strong plea for a 100 per cent membership in the state.

The annual meeting of the North Dakota Academy of Ophthalmology and Oto-Laryngology was held last month at Minot during the meeting of the North Dakota State Medical Association, and the following officers were elected: President, Dr. Andrew Carr, Minot; vice-president, Dr. Rolfe Tainter, Fargo; secretary-treasurer, Dr. F. L. Weeks, Valley City.

The annual meeting of the Northern Minnesota Medical Association will take place at Crookston on August 9 and 10. Twenty scientific papers will be presented and five clinics will be given. The banquet will be held on Monday, August 9, and the speakers will be Dr. O. J. Hagen, Moorhead; Dr. Morris Fishbein, Chicago; and Dr. Arnold Schwyzer, St. Paul.

The meeting of the health officers of Montana will be held at Billings, Montana, on July 14 and 15. The principal feature of the meeting will be a paper on trachoma by Dr. L. Webster Fox, of Philadelphia, which no doubt will be followed by a lively discussion. Cases from the Indian reservation will be presented for diagnosis and operation. Other distinguished men in this line will be present.

Dr. Henry C. Stuhr, of Minneapolis, died on June 7, at the age of 53. Death was caused by an automobile accident. Dr. Stuhr was a graduate of the Medical School of the University of Minnesota, class of '00. He spent two years in Vienna in graduate work and then located in Argyle until 1912, when he moved to Minneapolis. He was chief of the staff of St. Barnabas Hospital and a member of the staff of Northwestern. He was treasurer of the Minneapolis Clinical Association, and a member of many medical societies.

The Regents of the University of Minnesota have agreed to meet a committee appointed by the Minnesota State Medical Association to discuss policies of the School of Medicine. This request grew out of the matter of pay-patients at the University Hospital. The committee from the State Medical Association is composed of Ex-President H. M. Johnson, of Dawson; Drs. Geo. Douglas Head and Claude C. Kennedy, of Minneapolis; Dr. George Earl, of St. Paul; Dr. Arthur N. Collins, of Duluth; Dr. E. S. Judd, of Rochester; and Dr. E. L. Burnap, of Fergus Falls.

Stutsman County (N. D.) Medical Society

The Stutsman County Medical Society held its regular bimonthly meeting May 31, at Jamestown, N. D., in the offices of the Stutsman County Clinic.

There were ten doctors present. Dr. Frank Darrow, of Fargo, gave the principal paper of the evening on "Gastric and Duodenal Ulcers." The subject was presented by Dr. Darrow in a very real, comprehensive, and interesting manner. He especially emphasized the importance

of medical treatment in the majority of cases; but, in the cases in which surgery is indicated, he stressed the importance of pre- and post-operative medical dietetic management if the best results are to be obtained.

Dr. H. Milton Berg was elected Secretary-Treasurer to fill the vacancy left by Dr. Hotz, who is now practicing in Minnesota.

The next meeting of the Society will be held July 26.

H. M. BERG, M.D.,
Secretary-Treasurer.

Locum Tenens Wanted for July

To take charge of a Minnesota city and country practice. Will pay salary. Address 167, care of this office.

Position as Locum Tenens Wanted

During the months of July, August, and September. Address Dr. B. E. Reilly, care of the Ancker Hospital, St. Paul, Minn.

Good Opportunity

To join a small group in a community of 40,000. Specialty: obstetrics; children's diseases; eye, ear, nose, and throat work; or internal diseases. Address 169, care of this office.

Specialist Wanted

An Eye, Ear, Nose, and Throat man is wanted to join a Minneapolis Clinic. Ability and personality necessary. Salary leading to a partnership arrangement. Address 165, care of this office.

Locum Tenens Wanted

Beginning June 27th to August 1st for general practice in a North Dakota town of 350 inhabitants. Unopposed with large territory. Use of office and equipment free. Can have what you make. Address 168, care of this office.

Partnership Opening

I am looking for a doctor, preferably a German-speaking and a catholic, capable in surgery and gynecology, to join me in partnership and operation of a small hospital in Minnesota. Good references and \$2,000 required. Address 164, care of this office.

Work Wanted

By a German-speaking physician of excellent training and large experience. Position wanted as assistant, partnership, or locum tenens. Spent eight years in postgraduate hospital training, chiefly surgical and gynecological. Best of references. Address 138, care of this office.

Unusual Opportunity for Young Physician

Old-established practice in best small city in Minnesota of 7,000 population. Because of illness will sell or form permanent partnership. Complete office including x-ray and other electrical equipment. Principally office and city practice. Address 166, care of this office.

Fine Location and Fine Office in Minneapolis

There is a splendid location in a fast-growing section with no competition at 2300 West 50th St. Steam-heated modern offices at reasonable rent. End of the Oak and Harriet carline in fine new section of city. Inquire at above location or telephone Walnut 2413 (Christianson Drug Co.) or Hyland 3129 (owner of property).

Laboratory and X-Ray Technician Wants Position

Efficient and dependable technician desires position. Is a graduate in clinical laboratory work and has had eight years' experience in doctor's office and hospital as x-ray, laboratory, and physiotherapy technician and assistant. Has had one year's experience in hospital nursing and some training in anesthetics. Prefer position in office or clinic. Will go out of city. Excellent references. Address 160, care of this office.

TUBERCULOSIS :- June 28--July 3, 1926

A one-week short course in Tuberculosis for general practitioners will be held by the University of Minnesota Medical School at the University and at Glen Lake Sanatorium on the above dates. Lectures and clinics by specialists. A large number of patients and special clinical facilities at the Sanatorium. Fee for the week \$25.00.

A short course in Tuberculosis for nurses will be held at the University and Glen Lake the week of June 14.

FOR INFORMATION ADDRESS

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THE TREATMENT OF TUBERCULOSIS*

By H. A. BURNS, M.D.

MINNEAPOLIS, MINNESOTA

There are few diseases whose treatment has been more dogmatized than the treatment of pulmonary tuberculosis, yet treatment with its routine seems to be (the time element excepted) a simple procedure. Two factors must be considered in any form of treatment; the pathological process and its host. If treatment could resolve itself wholly into a routine and a theory, there would be nothing wanting after the physical equipment has been made available. Unfortunately we must consider the host along with the pathological process and while the theory is workable so far as the process is concerned, it becomes a sliding scale when it is applied to the host. The theory, therefore, becomes only relatively applicable, and since personality and emotional makeup cannot be standardized one must first analyze and appreciate the psychological background of the individual concerned before individualization in treatment can be initiated. While treatment too often resolves itself into a devitalized routine with the patient on the outside looking in as a casual observer, it is possible and essential to good treatment that the routine be "sold" to him who must partake thereof.

Every physician has observed lesions many times which by rule of thumb and routine alone would eventually, if not quickly, become healed if he were not forced to include in an otherwise perfect regime the individual who has possession

of the lesion. The question of the host's psychology at once introduces a problem in the treatment of tuberculosis which the building and maintenance of elaborate institutions has solved with limited success. The institution and its physical equipment and personnel were created primarily in recognition of the lesion. The host too often is left outside while his lesion is being treated inside. The institutional program must be sufficiently elastic to include the host as well as the lesion. The institution at best can only approximate success in treatment since it is the physical interpretation of a theory which is faulty in that it considers cross-sections of the community it serves through the institutional care of its tuberculous rather than the individual components of the community who have become clinical cases of tuberculosis.

The lesion of tuberculosis is of most concern to its host, who, for years prior to the manifestation of symptoms, has carried with him a fear of the disease. The onset of symptoms creates in the host a complex, a sense of well-being, which too frequently puts the host to further disadvantage in his struggle with the lesion. The physician who observes these psychological oscillations in his patient too often sees the host give determining advantages to the lesion. After a life spent in building up a defense against the disease, at home, in school, and in church, as well as in various other organizations, the lesions eventually manifest themselves to some of us.

*Presented before the Medical Staff of the Lymanhurst Hospital, Minneapolis, May 25, 1926.

Human conduct is not an easily or quickly moulded element in character-formation. Habit is formed as the result of tiresome repetition, yet defensive habits of a lifetime are frustrated the moment the modern treatment of the lesion begins. Routine demands that the host, as well as the lesion, accept the regime in a most passive, submissive manner.

The success of treatment is measured by the promptness with which a diagnosis is made and by the degree and length of time that the host can remain in a passive state. The degree to which the host can enter and remain in this condition can seldom be more than relative. Treatment must consider the psychological composition and environmental background before attempting to force the host into a rigid routine to which he does not easily adjust. Habits of many years standing, forming and directing psychological processes during this time, make the host's adjustment to routine relative and, if insisted upon for long, problematical.

Complete submergence of the personality is possible to but few. It is usually those who may continue their feeling of well-being under routine and those who are seriously toxic who submit most readily to prolonged institutional care. The dissatisfied, the lonely, the misfit, drift into and from routine, receiving a questionable amount of benefit from institutional experience. No institution can hold many of these cases long at a time and such periods of institutional care should be utilized in training and teaching in order that the host following discharge may be able to continue the fundamentals of treatment that make routine so essential in the care of the lesion.

In the host who, with his defensive habits accumulated during youth, has added social and possibly family responsibilities, and, unless he can be made to feel that his responsibilities are well cared for, the adjustment to treatment can never be more than approximate, and then only if he can feel that his co-operation will determine to a large degree the time of his release.

Few lesions progress far without being diagnosed comparatively early. There are few hosts who have not attempted to follow out a routine, yet there are a great many tuberculous who leave the routine before it is completed to continue as best they can. A kindly despotism reigns over them so long as routine is acceptable, which changes to a relative indifference the moment the host fails to swear his fealty to the laws governing the care of his lesion. The institutionalization of the case constitutes only a phase in the care of the individual regardless of his length of stay or ob-

servance of rules. It represents a comparatively short period of time in the life of the tuberculous. Institutionalization alone does not constitute the cure of the lesion or the rehabilitation of its host. It serves its greatest function as a training center, making it possible for the host upon leaving to survive with the maximum of comfort and usefulness while at the same time being of the least danger to susceptible associates. This group who are in need of medical treatment at home is not only the larger but the most inaccessible among whose members are found the greatest disseminators of the disease. No adequate machinery has yet been devised whose purpose it is to supervise and direct the care of this important group of cases.

Social histories are an important element in the study and treatment of the tuberculous. After many years of living, life has become a composite, a series of adjustments and re-adjustments to an environment which has supplied the host with the material comforts of life while crystalizing in his personality permanent habits of thought and action. However this may be, it has neither protected him from exposure and infection nor later from becoming the host to the tuberculous lesion which has reduced him to a state of partial and temporary, if not permanent and total, invalidism. Routine and medical supervision take charge when the environment has failed. In outlining the immediate future for the host he must be aided in his adjustment to an environment which is both new and artificial, but which will aid most in limiting the extension of the lesion and ultimately in gaining an arrest of the disease and a convalescence from it.

Routine instruction in the fundamentals of the disease, its etiology and treatment, is essential, but without the further individualization of treatment the host ultimately separates himself from routine, with his lesion in little, if any, better condition for him to continue to live with and survive than before routine has been accepted. The home treatment of the tuberculous is a great and serious problem, and no argument to the effect that hospitalization is the only solution can adequately complete the treatment program. It has become a condition, a by-product as it were, of a theory which must be acknowledged. Improvements upon the machinery now available must be developed to provide the continued care of the host and his lesion outside of the institution whose major duty now too often is the carrying out of a set routine.

The greatest number of treatment days in each care are usually spent outside of an institution

and away from a constantly supervised routine. To provide a home environment that will encourage and make essential routine possible, is a task that involves many factors, not the least of which is the attitude of the family toward the patient and its willingness and ability to disarrange the home sufficiently for one member to introduce a modified sanatorium regime into its midst. Home treatment must consider the necessity of preserving the essentials of sanatorium routine for the care of the lesion in the home. This requires an adjustment between the home and the host after institutional care and training have been discontinued. This training cannot ignore the family or its environment. As an essential adjunct to home treatment social histories should be taken while the patient is yet in the institution and used while the host is being trained to continue treatment outside, a treatment not necessarily independent of or separate from the medical regime which is altogether responsible for the care of the lesion in the institution.

Home treatment is an essential part of the treatment of a large part of the tuberculous population if treatment or control in any form is to be extended to this group who in most instances are amenable to both treatment and a modified routine. To extend the offer of hospital routine as the only treatment to this group is not only scientifically unsound but economically impossible. The follow-up and treatment of the host and his lesion should be initiated in the institution, and just as surely should it be extended to the home as an integral part of the treatment. The fact that the patient carries the lesion after leaving the institution is proof of his need for continued treatment and observation during the period of post-sanatorium convalescence up to the time of maximum employability. There is a social advantage and a public-health necessity indicating the need for this continuity of treatment and medical observation during the period following hospitalization now too often referred to in a depreciatory way as home treatment. The fact that the patient has not successfully bridled his individualism sufficiently to accept routine for an indefinite time is not conclusive that the best result can be secured by an absolute control of the host in a wholly artificial environment.

The problem of institutional treatment is a mechanical one in which the host too often is neglected. The great problem now remaining in the care of the host making it possible for him to survive with his lesion is through extending the period of treatment out from the institution to the home, making routine treatment prepara-

tory to continued treatment and convalescence in the home. Unless we treat the host we cannot treat the lesion, and unless the institutional care is made a training-school for later treatment outside there can be small justification for the cost and maintainance of the great sanatorium system now used for the routine treatment of tuberculosis.

The home, poorly equipped and inadequate as it may be, will remain the greatest institution in size and in the number of patients cared for. Since patients taking this type of treatment are the most widely distributed and most difficult to reach, and since they are the group who make the disease one of the most serious of public-health problems, it is evident that routine alone under the conditions as prescribed in too many modern institutions is not adequate. The institution and the home must co-operate and function as a united and single phase of the treatment of tuberculosis. The physicians who are responsible for the future treatment and control of the tuberculous must build the control machinery with home treatment as an important and vital part of the program.

DISCUSSION

DR. H. P. BACON: The world has gone "nuts" on psychology. The whole thing is a long way from supplanting scientific medicine, notwithstanding the enthusiasm of its devotees.

Since time immemorial people have gone to whatever represented the medical fraternity to get humbugged by receiving a miracle. Except for a few of the most enlightened the mental attitude handed down from the ages still bulks large; most people still seek a medical adviser to get humbugged, and psychology is but another name for the humbug that is handed them: common sense, is the need in medicine as much as in any other activity.

In disease, and we are now speaking particularly of tuberculosis, the main thing is the lesion, and our main endeavor is its healing.

If, as intimated by a speaker, we are going to teach all of our medical students psychology 60 per cent and scientific medicine 40 per cent, and treat the patient's lesion on the same basis, all may get richer along with the rest of the quacks, but while the patient may die happy, he is going to die just as surely.

DR. C. B. WRIGHT: Dr. Burns asked me to discuss his paper and permitted me to read it beforehand. He has given us an interesting angle to tuberculosis in this paper, which attracted me very much.

The adjustment of the individual mentally and physically to the harboring of a life-long invader, such as the tubercle bacillus, is a serious problem. As an illustration of this I would like to cite a case of a well-educated public health nurse whom I sent to a sanatorium about eighteen months ago. She had given up her work two months previously and, while waiting for admission, had rested and carried out directions at home. During these two

months she gained ten pounds in weight and felt very well. Shortly after her admission to the sanatorium, she began losing weight; her temperature went higher; pneumothorax did not do for her what she had expected; and she came to see me to be reassured as to the ability of the staff and their methods of handling her case. In other words, she was not adjusted at all mentally to the institution.

In addition to the psychology of the patient, there is the psychology of the doctor who should be considered. One is apt to develop an antagonism to that patient who is under one's care a long time without reacting favorably to one's treatment. One should constantly be on his guard against the development of such an attitude, and it would probably be better for the patient if cared for by another physician or in another institution, should this occur.

In private practice this is not a very serious problem because the patient is a free agent and need not hesitate to make a change at any time. In public institutions it is different, because here the patient and the doctor, for financial reasons, are compelled to carry on with each other. I would have advised this girl, had she been financially able, to go to another institution where she would have been a new problem. I have seen cases rapidly improve after such a change. As this was impossible, however, I did my best to reassure her, and I hope I succeeded.

Doctors are human, and, in passing around a ward every day, the patient who is cheerful and is progressing satisfactorily appeals to you more strongly than the individual who is chronically going wrong. In addition to being human, doctors should be very humane with a practical knowledge of psychology. In clinics and institutions the intimate relationship and mutual understanding of patient and doctor are exceedingly difficult, and well-trained social work, supervising the adjustment to the institution and the follow-up in the home, is almost indispensable.

I congratulate Dr. Burns on this paper, which so clearly emphasizes the necessity for considering tuberculosis, in greater or less degree, a life-long conflict between the individual and his disease, and emphasizes the importance of adjusting the individual, both mentally and physically, to this conception.

DR. SMILEY BLANTON: Dr. Burns was kind enough to send me a copy of his paper so that I might be able to discuss it at this meeting. My work in the field of child-guidance has not permitted me to follow closely the treatment of tuberculosis. I do not hesitate to say, however, that the question which Dr. Burns has raised of treating the personality of the patient, as well as his organic disease, is a very vital question in modern medicine. We are beginning to realize, as Dr. Burns has so well pointed out, that the physical make-up,—that is, the constitution of the patient,—and his mental attitude must be considered just as much as the disease itself.

The great advances made in the treatment of organic diseases have far outstripped the advances made in the treatment of psychological aspects of the disease. Dr. Frankwood Williams, director of the National Committee for Mental Hygiene, in a paper before the New York Medical Association some years ago, said that the old family doctor of bygone days treated not only the body but also the

mind. Dr. Williams said that it was his opinion that about 60 per cent of the diseases that people had were due primarily to psychological conflicts and morbid mental attitudes. Of course, there are very often some organic changes in these cases, but the morbid mental attitude is the primary cause. Dr. Williams said that he believed that the family doctor treated this 60 per cent of his patients rather skillfully, whereas the 40 per cent who suffered from some primary organic disease were poorly treated because medicine was not advanced so much at that time that these diseases could be treated properly. At the present time, the 40 per cent of the patients who are suffering from organic diseases receive excellent treatment, whereas the 60 per cent whose condition is caused primarily by a morbid mental state are rather neglected.

If this is true, it shows that there is need in our medical schools for giving our medical students training in the technic and principles of psychological medicine. They should be taught that every disease has a psychological aspect. Pneumonia, typhoid fever, heart disease, tuberculosis—all of these diseases must be treated not only from the physical but from the psychological aspect as well.

Psychological medicine makes use of three methods: persuasion, suggestion, and mental analysis. Medical students should be taught the technic of using persuasion and suggestion. In just what diseases can persuasion and suggestion be best used? How should they be used? When should you use persuasion? How far can you go with it? When should you use suggestion? What can you accomplish by it? In what diseases does it work best? And, finally, what types of cases need mental analysis? If the medical student is going to be properly trained to treat his patients at the present time, he must have some training in psychological medicine. To my mind, this is the vital question that Dr. Burns has raised in his excellent paper.

DR. E. T. W. BOQUIST: The highest art is that which conceals art, and perhaps the best psychology is that which goes by some other name. You can call it common sense, sympathy, getting the other man's point of view, or what you will. I think the great thing in treating tuberculous patients is to let them know that you have a real interest in them. I recall one case where the mental attitude seemed to hinder the patient from progress. The man had a rather large lesion, which he was taking care of fairly well. Still, he never seemed to get beyond a certain point in improvement. One day I had a talk with him and discovered that deep in that man's mind was the idea that his case was hopeless. I tried to convince him that it was not. Later, he had the same kind of talk with Dr. Mariette. Between us we finally persuaded him that he had a chance of recovery. Well, I do not know just what that change in mental attitude did. Did it make him take the cure better,—observe rest hours more faithfully,—or was there some change in his metabolism due to a different thought reflex? Anyway, he grew better. He graduated from the institution and was employed out there. Later he had a relapse, but he recovered quickly and was again discharged. His case, I think, is a striking illustration of how a mental attitude may hold a person back.

Of course, there are cases where any amount of psychology, any amount of getting the other fel-

low's point of view, is not going to help. It is hard to say where the boundary line is. And we must not forget our fundamentals of the treatment. I can recall several instances where the patient has gone to the sanatorium in a very rebellious mood and has been helped in spite of himself. As has already been said, we must use common sense.

DR. G. F. SWINNERTON. I think that Dr. Burns has brought before us the one thing which, with all our scientific education, is lacking in our medical schools, and which, I think, would be a very great advantage for our medical students to receive in psychology as applied to the practice of medicine. I do not know any school where that is provided. The majority of us go out to practice medicine, and learn practical psychology as we go. My experience with the acquisition of psychology in this manner has been quite wide.

Dr. Wright brought out an important point when he said that we must study our own psychology, as well as that of the patient. It is impossible for one man to be able to adapt himself to the psychology of every patient. In my particular work, industrial in character, a patient often comes to me two or three times, and concludes that my medicine is no good, or does not seem to do him any good; often I feel a lack of proper understanding of such an individual. I am so fortunately situated that I can refer him to others of our staff, who may better understand his make up.

I believe that Dr. Burns has brought out something that has a bearing on the whole study of medicine, and particularly tuberculosis, and those who are so situated as to be able to do so, should take definite steps to see that our medical students receive considerable instruction in applied psychology. Then, when they go out to practice they will be able to deal with their patients with very much greater intelligence.

DR. BURNS (closing): Since one of the chief functions of a paper is the promotion of an interchange of ideas it would seem that the discussion in this instance has revealed two important points which I tried to bring out, the importance of an understanding of the patient's psychology in its application to treatment, together with the problem of home treatment versus institutional treatment. There is a group, the tuberculous constitutional psychopath, who create a problem quite apart from the usual to which I have tried to limit myself in this paper.

Dean Ford has very well suggested the value of social histories in gaining valuable data upon which to base an understanding of the patient's psychology. It is usual, I believe, for tuberculosis sanatoria to use the social history at the present time. However, the social worker is not a psychologist or a physician, and frequently the history itself remains mute evidence to the fact that curiosity was the most potent factor in the development of the history. Such histories are of little use to the physician and must be revised or discarded. The social history must be a scientific document to be of use in arriving at an understanding of the patient's psychology.

Home treatment is a phase (too often ignored) in the treatment of the tuberculous. In this day of centralized organization and administration it is uncautious, even though logical, to advocate so unpopular a subject as home treatment. It remains a situation demanding the same attention now that existed even before the sanatorium became the alpha and the omega of tuberculosis treatment. Pratt of Boston has demonstrated that much can be accomplished outside of the institution. Much remains for us all to do both inside and outside of the sanatorium if we are to take our work seriously, and if we are to successfully control the patient, as he must be controlled, if the physician is the responsible guide to his convalescence.

THE TREATMENT OF SCOLIOSIS BY THE SO-CALLED COMPENSATION METHOD*

BY ARTHUR STEINDLER, M.D., F.A.C.S.

Professor of Orthopedic Surgery, State University of Iowa

IOWA CITY, IOWA

It may appear presumptuous to solicit the interest of the general practitioner in the problem of scoliosis when many of the specialists give it only scant and reluctant attention. But let me point out three reasons why I think the topic to be of interest to the profession in general:

First of all, it is a common affliction. In our series of 14,000 cases, 700, or 5 per cent, had structural scoliosis.

Secondly, in its fullest development it is a serious affliction. Not only does it gravely com-

promise the social advantages of the deformed, but it also endangers his health and often shortens his life.

And, thirdly, we believe that all the strenuous efforts to combat the deformity by various methods in vogue have met with failure, at least until most recent times. Since there may be a diversity of opinion of what constitutes such a failure, it may be just as well to specify this point.

In so far as the treatment aims to correct the deformity, the methods employed have been at least partially successful; but, insofar as the aim of treatment was not only to correct the de-

*Presented before the Soo Valley Medical Society, Sioux City, Iowa, January, 1926.

formity but also to maintain this correction indefinitely afterwards, it failed. Consequently, if we wish to maintain the form of the spine after it has gone through the process of correction, it appears almost always necessary to render the spine rigid and immovable by a separate operative act. In other words, there seems to be less control over the corrected spine than there is over the uncorrected so far as maintenance of form is concerned; only after correction the spine is rendered rigid and immovable by a separate operative act.

For a number of years we have been convinced that the error leading to failure is fundamental rather than technical. The one feature common to all methods is that they try by forcible means of pull, traction, or pressure to loosen up the deformed portion of the spine in order to give it as much of the appearance of symmetry as possible,—in other words, to mold it straight. But we must not forget that the spinal curve represents a contracture, such as is seen in a contracted knee or ankle, only much more complicated, involving many joints and engaging a multitude of large and small muscles. It is caused by merely mechanical forces, extrinsic and intrinsic; and the deformity is by no means a haphazard one, but its form is strictly prescribed by the pull of the muscles and by the arrangement of the articulations between the vertebræ, so that we must call the change in shape an obligatory and not a fortuitous one.

Let us assume, then, that such a contracture can be overcome by treatment. In order to hold the spine continually in symmetrical position it would further be necessary that the muscle equilibrium also be re-established. It is easier to understand the problem if we compare it with other contractures, for instance, with the club-foot.

To cure the club-foot two things are necessary: first one must restore the form by completely correcting the deformity. Then one must restore the function by completely re-establishing the muscle equilibrium, which alone controls the position in the various joints of the foot. Precisely the same holds true in scoliosis. To cure scoliosis two things also are necessary: first, you must completely correct the deformity, and, secondly, restore the muscle balance in order to hold the correction.

To these requirements our methods of treatment do not measure up as far as structural scoliosis is concerned: they accomplish correction only to a moderate degree, and even that is obtained only by relaxation of the curve, which

destroys the muscle equilibrium that existed in the rigid spine. In other words, the methods transform the fixed and stable curve into a relaxed and unstable one without obtaining their objective, namely, the correction of the curved spine.

It would be wrong to assume that any lack in skill or endeavor can be responsible for the poor results in our ordinary scoliosis methods. As a matter of fact the best that skill and application can produce has for three decades been bestowed by the orthopedic profession to this particular problem; but the error is possibly more fundamental. The ambitious aim to cure the deformity as we cure clubfoot, anatomically and physiologically, is not within our reach. We must renounce it; to make the structural scoliosis straight and strong, symmetrical and self-controlled is not possible; and in our attempts we deprive the spine of what we are unable to replace, except by operative means—its stability.

Let us now retrace our steps and return to the post of the quiet observer. Let us learn how nature herself tries to cope with the situation by the natural means at her disposal. First of all, the attempt to bring the body to absolute symmetry can be noticed only in conditions and stages which precede the stage of contracture. Never do we see an anatomical straightening of the spine when the contracture is already established. Nature's response to this contracture is the establishment of counter-contractures or counter-curves. If the primary curve is located in the dorsal spine, as it usually is, there will be established in the lumbar spine below a so-called compensatory curve in the opposite direction. The purpose of this counter-curve is, clearly, to offset the deflection of the body weight occasioned by the primary curve, so that the gravitational forces of the body are again more evenly distributed and the center of gravity again located over the center of the pelvis. This establishment of counter-curves under the influence of gravity is quite a usual occurrence. It is encountered in such conditions as flat-feet or club-feet or knock-ankles or knock-knees and represents simply the response of the body to the gravital stresses and the maintenance of the upright position against these stresses. By this arrangement of compensation it is quite possible for the body to retain its general alignment in which shoulder, pelvis, and supporting surface of the feet are placed squarely one upon another and bisected symmetrically by the line of gravity. Many cases, indeed, find their natural and definite re-arrangement in this manner. A muscle

equilibrium is often re-established in full control of the spine so that there is no further progress of the deformity.

But by far the greater majority of the cases of contracted or structural scoliosis do not come to a natural standstill because the deflection of the gravital stress to one side is too great or because the spine is inherently too weak in muscular or ligamentous resistance, and there occurs, in spite of compensatory curves, a list of the body as a whole toward the side of the deformity—one might say that the compensatory curve below has not been able to check the tendency of the body to lean over. One might call this a break in compensation. It is certain that in the clinical course of this deformity such a period of decompensation enters rather suddenly. The parents will state that the child has been carrying one shoulder higher and that the opposite hip has been protruding for a matter of a few months or even less. When you examine the child you find that the body is listing strongly to one side and that the pelvis is shifted to the other as though both had been turned around an imaginary center which lies usually at the level of the lower dorsal and upper lumbar spine. This is the feature of decompensation of which we have spoken, and which has such a significance for the course of the deformity. But behind it you must realize the slowly developing curvature of the spine, which gradually becomes rigid and contracted, which has been in formation possibly for years, and which only recently has sprung into prominence—thanks to this very feature of decompensation with its list of the body to one side and its protrusion of the hip to the other.

It has become obvious to the writer that the proper way of dealing with structural scoliosis is to follow the footsteps of nature and to develop these secondary compensating curves, rather than to persist in unsatisfactory attempts at direct correction.

The first step toward this end is the further mobilizing of the already mobile lumbar curve. This region is endowed with a greater degree of freedom in lateral and anteroposterior direction than the adjacent portions of both the lumbar and dorsal spine; and it is, therefore, at this point that the spine "breaks." We may call this the level of decompensation. When the spine breaks the portion of the body above this point inclines strongly to the side, producing the body list already described, the pelvis below the axis moves toward the opposite side, but to a lesser extent, and as it so moves, naturally carries the

thighs with it so that the thighs are no longer in exactly perpendicular position to the pelvis, but the one on the side of the dorsal curve goes into abduction and the other into adduction, while the feet cleave to the ground. The problem is now to move both body and pelvis back to the position they held before decompensation or "break" took place, and for this purpose the movable lumbar curve must be increased; it must equal the primary dorsal curve, both in extent and degree. Pelvis and shoulder are now moved back into the original position about a fulcrum lying midway between them, usually in the lumbodorsal region, like the two points of a compass. In practice this is done by pendulum movements of the pelvis and lumbar spine against the dorsal spine and especially effectively by shifting exercises which shift the upper portion of the body toward the left, the lower toward the right (if it is a right dorsal curve), until the pelvis is placed squarely over the feet and the shoulders over the pelvis, until a symmetrical S-shaped curve is established, and until a perpendicular erected from between the heels upward exactly strikes the gluteal fold, cuts the S-shaped curve symmetrically and touches the center of the occiput. We then have complete compensation in the frontal plane or compensation of the lateral curve.

In the same manner we can compensate for the rotation which accompanies the original lateral curve. We simply do this by giving an equal amount of rotation, but on the opposite side, to the lumbar curve; and because the lumbar spine shows very little independent rotation such rotation must be transmitted to the pelvis and cause rotation in the hip joints. We have then compensation both in lateral direction and compensation of rotation.

By measurements and weighing of the body halves under different conditions we are able to show that by so shifting the center of gravity the body moves from the side of the original curve and behind to the opposite side and in front so that the gravital stress becomes reversed. The scoliotic, as he naturally stands, carries an excess of body weight on the side of the convexity, but as he shifts to the other side (provided that the lumbar spine has been limbered and allows him to do so effectively), then the center of gravity is at once moved in a diagonal direction to the opposite side and forward, and he now carries an excess body weight on the concave side and in front instead of the convex side and behind. The first part of the treatment consists of manipulations and exercises for the ex-



Fig. 1

Fig. 2

Fig. 2a

Fig. 1. Scoliosis gymnastic. Manipulations, creeping, and shifting.
Fig. 2 and 2A. The compensation cast.

press purpose of making the patient able to shift in the described manner. (Fig. 1.)

According to the degree of the curvature from three to six weeks of gymnastic treatment are usually necessary to accomplish this.

Then follows a period of fixation in a plaster-of-Paris cast. The object of this fixation is to make the position of compensation a permanent one.

Assuming the primary curve being right dorsal, the cast is applied with the left shoulder elevated and the right shoulder depressed; with the left half of the pelvis lowered by placing the left hip in abducted position; then the whole body is carried over the midline by assuming the shifted position.

Provision is furthermore made for complete rotation by first holding unmovable the primary curve and then by giving the upper dorsal segment and the lumbar segment with the pelvis each a rotatory twist opposite to that of the dorsal rotation. With the body so held in position a plaster-of-Paris jacket is applied reaching from the high shoulder or the elevated humerus down to, and including, the abducted thigh on the concave side of the primary curve. (Fig. 2, 2a, 3.) Casts are worn for a period of from four to six months; but within that time frequent changes are made.

When the cast is removed the body represents the position of compensation with definite development of compensatory curves. We may now say that the gravital stresses have been redistributed as evenly as possible and there is, at the moment of removal of the cast, no preponder-

ance of gravital stress on either side provided compensation is complete.

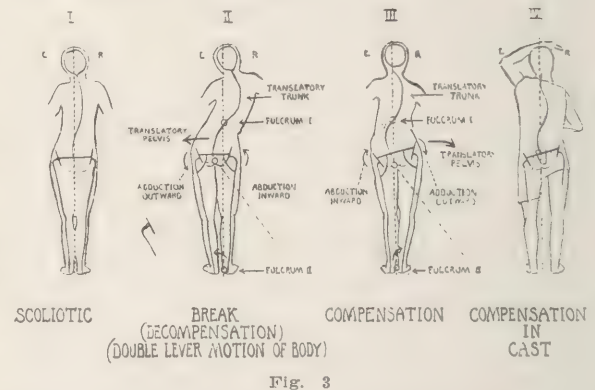


Fig. 3

Fig. 3. Reversal of position of decompensation (II) to that of compensation (III and IV) by cast.

We may not assume, however, that the compensation so acquired is a permanent one any more than a condition of correction or improvement may be classified as permanent under the old methods; but the great difference is that now a redistribution of body weight and an approach to body symmetry have been accomplished *without* relaxation of the spine. The spine is itself, therefore, as stable as it was at the beginning of treatment, while under the corrective methods the spine becomes unduly relaxed and unstable.

At this point the question of maintenance of compensation must be decided. Some of the spines are capable of maintaining indefinitely the newly acquired body equilibrium because the patient is past the period of rapid growth, because he is well endowed with musculature, and because his constitution is such as to give promise

of successful muscle development. These cases may be selected and subjected to intensive muscle training for a period of years. Most of the spines, however, after the casts are removed, will not be able to maintain the state of compensation by their own muscle power, either because the patients are young and grow rapidly or have an inherent weakness of the back muscles or are paralytic cases in which there is definite muscle loss, or, finally, because they have not been completely compensated and there are, therefore, asymmetrical gravital stresses still at work. These cases must be maintained by artificial means, of which the most preferable is the fusion operation by the method of Hibbs. But even in those cases which must be fused the preceding compensatory treatment is of decided benefit because it restores the body alignment without relaxation of the spine.

In the last two years we have treated by compensation 61 cases; of these 48 were completely, and 15 incompletely, compensated.

Of 60 cases fused (some of these after corrective treatment by the older methods), the end-results were known in 48 cases, and of these 34 were completely, and 10 incompletely, compensated. In 4 cases a pseudo-arthritis developed and the fusion did not hold, so that the patient had to be re-operated on. It is significant that in all 4 cases the "break" occurred in the lumbo-dorsal junction and that these cases were incompletely compensated. (Fig. 4, 5, 6.)

SUMMARY

We have endeavored to show that the corrective methods based upon direct application of

force to the scoliotic contracture do not produce the desired degree of correction and that they particularly fail in the maintenance of the corrected position.

On the other hand, the re-alignment of the spine by compensation produces a satisfactory degree of body symmetry without interfering with the stability of the spine and, therefore, furnishes a better basis for maintenance of position. A number of those so compensated will hold their equilibrium by their own muscle power.

In the majority of the cases compensated by treatment, operative fixation must follow; but, here also, the realignment by compensation makes the stabilization of the spine by operation much more reliable.

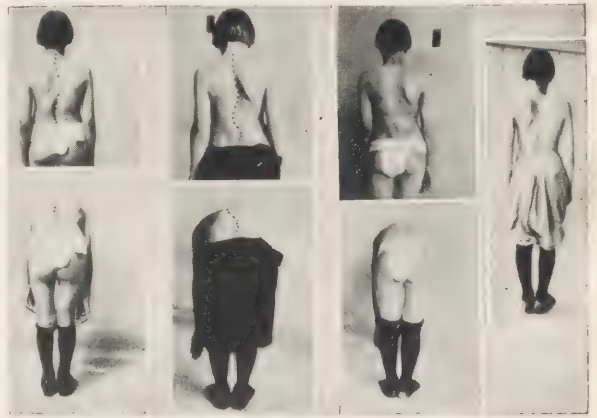


Fig. 4

Fig. 4. Case E. G. Treated by compensation and fusion.



Fig. 5

Fig. 6

Fig. 5. Case A. T. Treated by compensation (incomplete) fusion.

Fig. 6. Case E. D. Treated by compensation.

GASTRIC AND DUODENAL ULCERS, WITH REPORT OF UNUSUAL CASES*

By A. E. BENJAMIN, M.D.

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Ulcers of the stomach or duodenum still cause much suffering and loss of many human lives annually. With all our theories as to the etiology of this affliction the true cause, apparently, has not yet been found. Many important facts, however, have been observed by the profession for years in relation to the cause of ulcers. Animal experiment and laboratory findings each year are now adding much to our knowledge of this disease; consequently we may expect more definite facts to be established soon. It had been noted by physicians that individuals having diseased teeth removed early remained comparatively free from gastric symptoms, and that those who endeavored to save some of the dead teeth by having them filled or crowned suffered more in comparison with the other class. Some persons did not think it paid to save the diseased teeth, and showed their good judgment, as modern dentistry has proved. It had also been found that unclean food, excessive diet, and extreme constipation or stasis caused hyperacidity and considerable gastric distress. It had been observed that attacks of so-called indigestion occurred more often during the fall and spring when colds and tonsillitis were prevalent, thus showing a possible causative relationship.

Ulcers of the stomach or duodenum occur in the robust youth, as well as in the old and feeble. In the writer's experience more have occurred in the male. Nationality, apparently, has little bearing upon gastric disturbances. In regions where there are sudden changes in temperature and where acute respiratory infections are prevalent ulcers perhaps are more common. People who are habitually unclean or careless about food, drink and hygienic principles may suffer more. Heredity may play a part, as I have known several ulcers to have occurred in one family, as illustrated in a case herein reported. Perhaps similar food and the manner of living, as well as the environment, were the real factors in these cases.

Experiments by Rosenow and others explain why infected teeth or tonsils may lead to gastric trouble. These experiments show that the streptococci found in the experimentally produced ul-

cer are also found in the foci of infection and that the streptococci from a focus or ulcer, when injected intravenously, seem to have a direct action on the stomach, producing hemorrhages and ulcers. When there is a pylorospasm produced by some mechanical or chemical irritant, the acidity is increased, and ulcer-formation in the stomach or around the pyloric area is not an unnatural result. Perhaps we shall find that gastric or duodenal ulcers form, through a combination of causes, in the presence of a changed physiological action of the alimentary canal.

LOCATION OF ULCER

Gastric ulcers usually occur posteriorly and near the mid-portion of the lesser curvature and in the vicinity of the terminal vessels; therefore thrombosis is more likely to occur, and healing is less rapid. This may be an added reason for carcinoma developing upon a gastric ulcer in this locality. Duodenal ulcers occur on the anterior surface usually within 1.7 cm. of the pylorus. A peptic ulcer sometimes forms on the jejunal side after a gastro-enterostomy has been made. The non-absorbable suture when used may bear a causative relationship to the ulcer.

Gastric and duodenal ulcers may be acute or chronic, and they may be of the penetrating or superficial type. A penetrating ulcer of the stomach is very often greatly indurated, therefore, being sometimes mistaken for cancer. Nature comes to the patient's assistance and often blocks these areas with omentum or some contiguous organ. In an acute perforated ulcer nature has not had time to act, and few or no adhesions are found around it. Extensive deformities of the stomach result sometimes in chronic ulcer as an hour-glass formation, with much interference of function.

SYMPTOMS

The symptoms of a gastric ulcer depend upon its location, whether acute or chronic, superficial, penetrating, or perforating. The symptoms also depend upon the size of the ulcer, the temperament of the patient, the occupation and habits of the individual, and the care which the patient shows in regard to his diet and drink. Symptoms are very often modified by complicating diseases,

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such as gall-stones, cholecystitis, appendicitis, or diseases of any part of the alimentary canal or of the intra-abdominal organs. If located near the pylorus, obstructive symptoms, sooner or later, may supervene, and when a pylorospasm occurs these symptoms are much aggravated; hyperacidity is experienced, the contents of the stomach remain longer, food is not digested, and fermentation and edema of the tissue may take place, thus further altering the vitality and strength of the stomach wall, favoring perforation.

In a few cases, especially the perforating type, the symptoms are very acute. Perforation may be preceded by few warning signs, and when the perforation occurs the patient may express a belief that something has broken inside, and when there is a temporary relief from pain it may give one a clue as to what has occurred and may warrant a hurried investigation. A rising leucocyte count and pain from peritoneal involvement with board-like rigidity and an extended area of tenderness, as well as the increased distention, are too late signs to warrant the best prognosis.

DIAGNOSIS

There was a time in the practice of medicine when the diagnosis of gastric and duodenal ulcers was quite difficult, but since a more accurate stomach analysis is now made and through the advent of the x -ray much uncertainty has been removed; therefore accurate diagnosis is possible in perhaps 90 per cent of the chronic cases. When the clinical symptoms are well defined and the chemical analysis thoroughly studied, the x -ray confirms the diagnosis in nearly all ulcer cases in which there is any break in the mucous membrane with involvement of the muscular layer. An imperfect cap is usually found where the duodenum is involved; however, one must take into account a possible gall-bladder disease or adhesions that might produce a deformity. No case should be neglected or fail to receive the diagnostic knowledge obtained from this relatively accurate method. It is a fairly constant adjunct of the physicians to-day, but there are still too many patients who are not given the advantage of this method of diagnosis because of the expense to the individual; therefore it seems necessary that physicians and surgeons in some way should make it possible for every patient, rich or poor, to obtain this necessary early diagnostic study. Thus all patients with any gastro-intestinal symptoms of a more or less chronic nature should be subjected to x -ray examinations. An early diagnosis and a

proper supervision of small ulcers in the incipient stage will go a long way to obviate serious consequences.

TREATMENT

Physicians and surgeons have not yet come to a satisfactory understanding as far as the treatment of gastric and duodenal ulcers is concerned. Not until every individual suffering with gastric disturbances is subjected to the same diagnostic methods in equally skilled hands and competent interpreters of x -ray findings, shall we arrive at a definite method for treating gastric and duodenal ulcers.

Much depends upon the character of the ulcer and its location. In a simple superficial ulcer of the stomach medical treatment may be tried, and no doubt many cures will result, providing all the foci of possible infection are removed. Inasmuch as elimination of waste products is essential to the normal physiological function of the alimentary canal, normal bowel-peristalsis should be stimulated in the formative stage of the ulcer. When stasis is pronounced the acid secretion is increased and an ulcer formation is more probable. Besides all of the ordinary methods for producing proper bowel activity, it is very beneficial to have these cases take from one to two glasses of cold water in the morning one-half hour before rising and to lie on the right side, and, if necessary, to indulge in a few abdominal exercises. Usually the normal bowel action results when this procedure is carried out regularly, for the water soon enters into the duodenum, flushes this area, and carries the acid contents into the lower intestine and produces peristalsis and an evacuation.

Gastric ulcers which are chronic, deep seated, or penetrating, with or without adhesions or hemorrhages, are occasionally followed by a malignant growth in the same area. A physician who continues to treat such a case by medical means and who will not consult a surgeon, is assuming a great deal more responsibility than he is justified in taking in view of our present knowledge. No doubt the percentage of cures will increase and the frequency of gastric cancer decrease if such physicians are convinced of the efficacy of surgical means. Concerning the question of duodenal ulcer, there may be some justified objection to surgical treatment, for carcinoma seldom occurs, but when symptoms continue and disabling lesions are in evidence the case becomes a surgical one. A duodenal ulcer with a constant deformity of the cap, especially with obstruction or with hemorrhages, I believe,

should be operated on. The results are so good at the present time and the mortality so low that there are few valid objections to surgical treatment.

OPERATIVE TREATMENT

Pfinister's operation is not very popular among American surgeons. It is a very radical procedure for the purpose of reducing the acid area of the stomach. A gastro-enterostomy, apparently, gives equally good results in at least 80 per cent of the cases. It has stood the test of time and should it not prove successful a resection of the pyloric end of the stomach can be performed later. By a gastro-enterostomy the capacity of the stomach is not decreased. With a moderately short loop and a large opening the vicious circle is not to be feared, nor is the use of mechanical means necessary for closing the pylorus. The use of absorbable sutures for gastro-intestinal surgery, or linen for the inner and chromic for the outer layer, does not result in disabling adhesions or in narrowing of the opening on account of scar formation, as when linen sutures are used for both suture layers, nor are peptic-jejunal ulcers common after the operation. The bleeding vessels are usually ligated when an anastomosis is made, but the back lock stitch for the inner sutures obviates this necessity as it controls the bleeding quite thoroughly.

Balfour has formulated some rules for the medical treatment of duodenal ulcers: namely, "Patients under twenty-five or patients with mild symptoms of short duration, cases where ulcer is incidentally found by x-ray with no symptoms, and patients who, on account of infirmities and other diseases, make the risk of the operation greater than the ulcer, should not undergo the operation." These rules are safe ones and should guide the internist, as well as the surgeon, in selecting the form of treatment.

All these classes, with the exception of the last, however, if the symptoms persist, should receive the benefits of surgical treatment. The medical treatment should cease when the patient is in a good condition for an operation, and the majority of cases will choose the operative course if given the opportunity.

POST-OPERATIVE TREATMENT

There is a certain percentage of cases in which nausea and vomiting follow the operation of gastro-enterostomy. Where this is present the stomach tube should be used, or the duodenal tube should be retained in the stomach to carry off gases and stomach contents. The small stom-

ach tube, passed through the nostril and into the stomach, is easily tolerated, and empties the stomach more readily of mucus and blood clots. By this method water can be given frequently, and the stomach washed if necessary. Thus all gaseous distention can be obviated, producing less tension on the suture line. If there is much pulling on the gastro-enterostomy opening by the heavy omentum and bowel, elevating the foot of the bed will relieve this condition and allow the gas to pass more readily from the stomach into the jejunum. Changing the position of the patient at intervals is of benefit as it allows trapped areas of gas to escape more easily, therefore lessening gastro-intestinal distention. The use of pituitrin and oil enemas, as well as a modified Noble's, gives relief by lessening the possibility of stasis. The use of atropin by mouth for a short period is conducive to a more healthy function of the bowels. Less work is put upon the tissues in the operative area if a liquid diet is used for two or three days and an easily digested food later. Thus a firmer and quicker union occurs and less extensive scar formation results.

GENERAL REMARKS

We have arrived to-day at a stage in the development of gastro-intestinal surgery when it has become simple and satisfactory and, I might say, one of the most attractive fields of surgery because of the results obtained and the mutual satisfaction of patients and the surgeon.

CONCLUSIONS

1. The profession has yet much to learn about the cause of gastric and duodenal ulcers.
2. Perhaps our method of treatment will be greatly modified when we have found the real reason for their development.
3. With our present knowledge of the disease we must encourage patients to have all possible foci of infection removed or treated.
4. We must learn earlier to recognize symptoms that lead up to ulcer, such as a faulty physiological action of the alimentary canal, and must restore this action to normal.
5. Patients should be instructed to regard any unusual gastro-intestinal symptoms more carefully and give the physician a chance to prevent a possible serious result.
6. The internist and surgeon should co-operate and observe more strictly their individual field of usefulness in the management of a case of gastric or duodenal ulcer.

INTERESTING AND UNUSUAL CASES

CASE 1.—J. W., aged 20, male student. Weight, 155 lb.; height, 5 feet 11 inches. American. General appearance, good. Habits and environment, good.

Family History: Good. Father and mother and two sisters living and well.

Personal History: Usual children's diseases. Frequent tonsillitis. Pain occasionally in gastric area two to three hours after eating.

Chief Complaints: Two weeks ago he stayed in bed on account of pain in abdomen. On December 15, at 5:45 p. m. he went to a telephone and in five minutes he felt a "pop," a feeling as though something broke inside of the abdomen. He thought it might be appendicitis. There was no immediate pain. Later pain came on and was continuous and so severe that he was unable to extend his legs. The pain was sharp, cutting in character, and in the region of the appendix. He was sent to the hospital that evening. At 8 p. m. he vomited considerable amount of coffee-ground-color material containing blood and bile. Operation was advised and performed at 9 p. m.

Physical and Laboratory Findings: Teeth good. Tonsils infected. There was board-like rigidity of abdomen especially on the right side. Leucocyte count was 24,000 with 83 per cent pmns. x-ray report without a barium meal was negative for renal and biliary stones. Hgb., 95 percent. Blood pressure, 125/55. X-ray months before showed an imperfect cap.

Findings at Operation: Abdomen contained gastric juice, bile, mucus, some blood, and stomach contents. There was an indurated mass at the pylorus with a perforated ulcer, about one-eighth inch in diameter, on the anterior surface near the pyloric area.

Operation: Right rectus incision. It was difficult to bring the ulcer-bearing tissue into an accessible position in the abdomen, or to invert the ulcer owing to the friability and thickness of the surrounding tissue. The gastrohepatic and gastrocolic omenta were brought in two layers over the ulcerated area and carefully stitched over and around the opening. Two Penrose drains were used. A small-caliber stomach tube was placed through the right nostril and left in place during the night. As a result the patient did not vomit. The gas and fluid escaped through the tube, and the abdomen remained flat.

Course: Next morning the temperature was 102° and pulse 120. Next day the temperature dropped to 99° and pulse to 70. After that both remained normal. Convalescence was steady with no pain or emesis. Has remained well since that time.

Interesting points of case: Frequent attacks of tonsillitis. Location of ulcer. Inability to close and manner of plugging. Satisfactory convalescence and recovery. Interesting personal description of perforation.

CASE 2.—O. H. W., male, aged 36. A fireman. January 3, 1918.

Family History: Negative.

Personal History: Good health until a week ago, when he had more or less pain in right inguinal region. When a mass protruded there he would vomit and have severe pain. On lying down this mass would disappear. He went to work, but was obliged to

return home on account of pain and vomiting. He was sent to the hospital the same day. He vomited some blood.

Chief Complaint: Protrusion of mass at right inguinal ring, bloody emesis, and pain.

Physical and Laboratory Findings: A small soft mass at right inguinal ring protruded, and auscultation elicited gurgling. Abdomen fairly soft, but tender over lower right abdomen and in gall-bladder region. Pulse 85.

Treatment before Operation: In hospital had enema, enteroclysis, and was prepared for herniotomy and for possible pathology in upper abdomen.

Findings at operation: Sac was found adherent to knuckle of bowel caught in neck of the canal. The constriction partly occluded the bowel. Circulation fairly good in loop. Bloody serum and mucus escaped on opening the sac. Adhesions of omentum and exudate above and below liver. Gas and stomach contents were found free in abdomen. A perforation about one-half inch in diameter opened into stomach near pylorus.

Operation: Constricting band separated. Incision extended on account of suspected gastric perforation. The gastric perforation was stitched up with chromic catgut and supplemented by mass of omentum. One tube and a split drainage tube were employed for drainage. Also one tube at upper part of hernial incision.

Course: Patient became weak during the operation. Pulse 112 after operation. Perspired freely. Patient did quite well until about 3 p. m., when the pulse began to get weak and almost imperceptible. He died at 8 p. m.

Interesting Features:

1. Hernia one week duration. Strangulation of bowel causing nausea.
2. Working the day on entering hospital.
3. Lack of severe symptoms at first.
4. No history of apparent complicating ulcer.
5. Value of exploration.

Causative Factors: Hernia possibly producing stasis and vomiting, and the strain caused a perforation.

CASE 3.—H. P., aged 42, male. Weight 173 lbs. Height, 5 feet 10 inches. American, farmer.

General Appearance: Well nourished, good physique. Habits, good.

Environment: Lives in a healthy locality on a farm near the bluff of the Minnesota River. Good hygienic surroundings and good water.

Family History: One brother died at age of 32 of perforated duodenal ulcer. One sister died at age of 49 of perforated gastric ulcer. She visited a doctor three days before, but died a few hours after the operation.

Personal History: Had practically all childhood diseases. Had peritonitis as a child, being sick four to five days, having pain, emesis, and delirium. When eighteen years old had sensitive, enlarged cervical glands. Has considerable distress and attacks of pain several hours after eating and on awaking at night; had attacks of pain and emesis three to four times during the year and soreness near the umbilicus. Has considerable constipation.

Chief Complaints: Three to four hours after eating becomes quite distressed with gas. Vomits at times.

Physical and Laboratory Findings: Infected teeth and diseased tonsils. Dilated and prolapsed stomach. Has pain on pressure over appendix and irregular soreness. Pain on pressure over duodenum. Normal urine. Hgb., 90 per cent. Blood pressure 115/75. Bleeding time two and one-half minutes and clotting time three and one-half minutes. White cell count normal.

X-ray Findings: Evidence points to a chronic duodenal ulcer or a small diverticulum of the duodenum. The large six-hours retention meal indicates a partial obstruction at the pylorus.

Findings at Operation: December 27, 1924. Duodenal ulcer with indurated mass near pylorus, one and one-fourth inches in diameter. One fibrous band extended from the ulcer to the fundus of the gall-bladder. The appendix was thickened and chronically diseased.

Operation: Right rectus incision. Posterior gastro-enterostomy with a three-inch opening was somewhat difficult on account of adhesions. Pagenstecher suture for inner, chromic catgut for outer. Excessive bleeding of stomach and bowel opening was controlled by back-lock stitches appendectomy.

Course: Temperature was up a few days on account of a cold. Convalescence satisfactory; no vomiting at any time since operation. Present condition very satisfactory. Has worked hard on a farm since.

Special Features: History of three ulcers in same family. Long history of abdominal disease and occasional emesis. Probable appendicitis as a child. Diseased appendix found at operation. Diseased tonsils and infected teeth. Obstruction and large six-hour retention meal.

Causative Factors: Infected teeth and tonsils, appendicitis and stasis.

CASE 4.—E. H. O., male, aged 24, single. Clerk. Environment: Good.

Personal History: In summer of 1923 had gastric disturbances, also dizziness, weakness and tarry stools. Pain at times two to three hours after meals, gnawing in character and relieved by food. Had attacks in July and November, 1924. This complaint continued up to January, 1925, when he was operated on elsewhere for a gastric ulcer. None was found, but the appendix was removed.

Physical and Laboratory Findings: Anemic from loss of blood. Pulse regular, 80 per minute. Slight tenderness in epigastrium on deep palpation. No dyspnea or sweating. Urinalysis showed trace of albumin and once sugar, with occasional pus cells. Bleeding time 3'50"; clotting time 4'18" and complete in five minutes. Blood pressure 108/66; r.b.c., 2,610,000. Hgb., 48 per cent. Wassermann, negative.

X-ray Report: No x-ray evidence of gall-stones. There was definite evidence of a non-obstructional ulcer at the pyloric sphincter.

Findings at Operation: Omentum, as well as cecum and duodenum, was adherent along the whole of right side and to the ascending colon constricting it. Loops of small intestines also adherent and kinked. Duodenum greatly dilated. Superficial pyloric ulcer found. Upper abdominal wall showed imperfect union following former operation.

Operation: Omental adhesions carefully separated and tied. On account of two x-ray findings of ulcer previous to and at second operation a gastro-enter-

ostomy was performed. Inner linen suture and outer chromic were used. Mesentery of colon was fastened around opening. Two drains and stay sutures were employed.

Course: Patient vomited off and on for four or five days. Gastric lavage given for ten successive days. Had post-operative bleeding for five days. Temperature range 80°-100°. Pulse 120 for four days after operation, after that 90 and declining to normal. Patient is feeling well and working every day. Has no more vomiting, bleeding, or pain. Eats normally. Hgb. 57 per cent, r.b.c. 4,800,000.

Important Points of Case:

1. Amount of bleeding before operation.
2. Found only appendicitis at first operation.
3. The adhesions found at second operation.
4. Convalescence with hemorrhages and vomiting.
5. Slow, but good recovery, except Hgb. 57 per cent, October 13, 1925.
6. Finding of superficial ulcer and dilated duodenum.

Possible Causes: Appendicitis. Intestinal stasis from adhesions.

CASE 5.—A. R., male, aged 48, weight 131 lb. American. Carpenter.

General Appearance: Good. **Environment,** good.

Family History: Good.

Personal History: Typhoid fever, diphtheria, and measles as a child.

Chief Complaints: Four weeks ago pain in epigastrium was experienced, gnawing in character, coming on two hours after meals. Acid foods aggravate pain. Pain radiates to back. Never jaundiced. Constipated. Loss in weight.

Physical and Laboratory Findings: A few infected teeth. Two points of tenderness, one at appendiceal region and the other at the gall-bladder. Urine, normal. Hgb., 80 per cent, w.b.c., 10,000. Wassermann, negative. Bleeding time 4'50" and clotting time 1'40." Stomach analysis showed 66 per cent HCl.

X-ray Report: Evidence points to an hour-glass constriction in region of pars media due to an old ulcer on the lesser curvature. Motility somewhat interfered with but obstruction not great.

Findings at Operation: Gall-bladder normal except for a few adhesions around fundus. Pylorus patulous. A crater-like ulcer, three-fourths inch in diameter on the posterior wall of the stomach at the lesser curvature with wide area of inclusion. Lymphatic glands of the gastroduodenal omentum much enlarged. Appendix retrocecal and adherent in pelvis. Membranous pericolicitis constricting the right colon.

Operation: October 13, 1921. Appendix removed. Lymphatic glands removed for biopsy. Stomach opened on anterior wall in front of ulcer, where its base was easily inspected and then thoroughly cauterized. The opening in the stomach was closed.

Course: Patient made steady gain after operation. Stomach being somewhat reduced in size necessitated smaller feedings and unless too large a meal or meat was taken patient felt quite well. Gained forty pounds in seven weeks. Has maintained about that weight and has worked right along. Has worked in lumber yard since operation. Temperature range, 98.2°-99.4°. Pulse range 60-80. Splendid convalescence. Fourteen days in hospital.

Interesting Features of Case:

1. Short duration of symptoms.
2. Loss in weight.
3. Diseased appendix and membranous pericolicitis and stasis.
4. Some infected teeth.
5. Large ulcers resembling cancer.
6. Good result from cautery.

Causative Factors:

1. Diseased teeth.
2. Diseased appendix.
3. Stasis from membranous pericolicitis.

CASE 6.—E. L., female, aged 39. Single. Weight 125 lb. Norwegian. Habits, good. Teacher.

General Appearance: Good. Environment, good, except on feet a great deal.

Family History: Two brothers and one sister died of pulmonary tuberculosis. One brother died of inflammation of the bowels.

Personal History: Measles, mumps, and chicken-pox as a child. Infected teeth. Had a hysterectomy for fibroids and right ovary, both tubes and diseased appendix removed in 1921.

Chief Complaints: Pain in stomach* especially after eating acid foods for past six to eight years. Has been severely constipated. Had stomach and bowel trouble all summer of 1921, consisting of attacks of emesis and constipation. This gastric disturbance has increased during the past few weeks. Has vomited several times with relief of pain. Stopped teaching on November 14, but gradually became worse. Lost ten pounds in three weeks.

Physical and Laboratory Findings: Teeth diseased,

tonsils infected. Some ptosis and enlargement of stomach. Motor meal showed 85 per cent retention. Hgb., 75 per cent. Weight 114 pounds. Urine, normal. Bleeding time 4'10" and clotting time 6'30." Gastric analysis showed total acidity of 60 per cent and free acid of 46 per cent.

X-ray Report: Large dilated hypotonic stomach with hyperperistalsis. Constant cap deformity. Opinion: Duodenal ulcer, obstructing pylorus.

Findings at Operation: Large obstructing ulcer just beyond pylorus. Stomach somewhat dilated.

Operation: Mid-line incision above umbilicus. Posterior gasto-enterostomy with large opening was performed. Inner edges were sewed with linen suture using back lock stitch occasionally; outer with chromic catgut No. 0.

Course: Had slight vomiting first and second day, normal temperature during whole course, and pulse regaining normal rate four days after operation. She gradually gained weight and has continued her duties as a teacher since with no gastric disturbance.

Interesting Points:

1. One brother died of inflammation of bowel.
2. Diseased appendix, uterine fibroids, and cystic ovary removed before this operation. Infected teeth and tonsils.
3. Almost complete closure of pylorus causing 85 per cent retention.
4. Unusually smooth convalescence and in perfect condition since.

Possible Causative Factors:

1. Heredity.
2. Intestinal stasis.
3. Infected teeth.

SCARLET FEVER IMMUNIZATION*

By CHESTER A. STEWART, M.D., PH.D.

Assistant Professor Department of Pediatrics, University of Minnesota Medical School.

MINNEAPOLIS, MINNESOTA

Recently as the result of the classical researches of the Dicks renewed interest has been awakened as to the possibility of actively immunizing patients against scarlet fever, and of treating the disease by means of a specific serum. A survey of the literature reveals that Gabritschewsky isolated a streptococcus from cases of scarlet fever in 1906. He demonstrated also that this streptococcus produced a toxin which upon injection into man produced a rash identical with that characteristic of scarlet fever. In addition Gabritschewsky employed this toxin to produce an active immunity to the disease. As a result of these investigations scarlet fever toxin was used rather extensively for a time in Russia for immunizing purposes, but following his untimely death this procedure apparently was largely discontinued.

Moser, in 1902, developed an antistreptococcic

serum which frequently gave gratifying results in treating cases of scarlet fever. Previous to that time Weishecker (1897) was using convalescent serum with beneficial results. Kling and Wedfelt (1917) also reported most favorable experiences from the employment of convalescent serum in a large series of cases.

In 1923 the Dicks succeeded in producing scarlet fever in man, by means of the specific streptococcus, and defined the unit of scarlet fever toxin as the smallest amount of this toxin that will produce a cutaneous reaction in an individual just developing scarlet fever. This same toxin is now being used to produce an active immunity to the disease, but the work is still in the experimental stage. The discovery that the toxin produces an antitoxin on injection into horses has made possible the production of a scarlet antistreptococcic serum, which bids fair to prove to be a valuable remedial agent in treating the disease. Dochez (1924) recently has used a differ-

*Presented before the Linn County Medical Society, Cedar Rapids, Iowa.

ent method of producing scarlet fever antitoxin which preparation according to Blake, Thorp, and Lynch (1924) results in a definite fading of the rash within twenty-four hours accompanied by an improvement in the toxic symptoms when used early in the course of the disease. Since that time beneficial results have been recorded frequently, following the administration of serums made according to the method of the Dicks and Dochez to patients having scarlet fever, but to date the superiority of one serum as compared with the other apparently has not been fully established.

The conspicuous accomplishments of recent investigations of scarlet fever include the experimental production of the disease in man, the standardization of the scarlet fever toxin unit, the development of the Dick test, the production of specific serum for treating the disease, and also an endeavor to actively immunize susceptible individuals against scarlet fever. The toxicity of the naked toxin is so great, however, that its employment for immunizing purposes is beset with great difficulties necessitating its use in many injections each containing progressively larger skin test doses. The observation of Larson, Montank, and Nelson that sodium ricinoleate (castor oil soap) in proper concentration detoxifies scarlet fever toxin without destroying its immunizing properties promises to give the medical profession a preparation by means of which children especially may be rendered immune to scarlet fever safely and without experiencing unpleasant toxic reactions. During the past two years the author has used this preparation in a considerable number of children in whom the reactions consisted essentially in a local redness and tenderness at the site of injection, with occasional slight elevation in temperature. In no instance has a reaction occurred of sufficient severity to confine the patient to bed. The observation has been made, however, that the reactions, although mild, are more definite in older than in younger children. From the subcutaneous administration of three injections of 3,000 skin test doses each of scarlet fever toxin detoxified by

means of castor oil soap to date a series of 28 children have been rendered negative to the Dick test and have remained negative over a period of fifteen months. Whether or not the immunity conferred in this manner will endure for a longer period still remains a matter of further testing of these patients. The persistence of a negative reaction to the Dick test in this group for this long a period is very gratifying indeed and gives promise that a more or less permanent immunity to scarlet fever may be expected from the administration to children of 9,000 or more skin test doses of Larson's detoxified preparation. Further study may reveal that larger total skin test doses, however, may be advisable. In addition to the above 28 cases about 200 children have been immunized against scarlet fever, among whom no cases of scarlet fever have occurred in spite of the fact that the disease has been rather prevalent in Minneapolis during the past year. Although this observation is not conclusive nevertheless it is strongly suggestive that the immunity given in this manner has proved of some protective value. This opinion is supported by the fact that several of these immunized children have been definitely and intimately exposed to scarlet fever without contracting the disease.

SUMMARY

Following the subcutaneous injection of three doses of 3,000 skin test doses each of scarlet fever toxin detoxified by means of sodium ricinoleate the Dick test has remained negative for a period of fifteen months in a group of 28 patients.

No cases of scarlet fever have occurred among 228 children immunized in this manner in spite of the fact that the disease has been very prevalent in Minneapolis during the past year.

Several of these immunized children have been intimately exposed to scarlet fever without contracting the disease.

The reactions in children following the repeated injection of 3,000 skin test doses of Larson's castor oil soap preparation are so mild as to be practically negligible.

"ARTHROSCOPY": A PRELIMINARY REPORT

By EMIL S. GEIST, M.D.

MINNEAPOLIS, MINNESOTA

For the past few years, orthopedic surgeons have been resorting to the practice of opening up a suspected joint, inspecting its gross appearance,

and obtaining tissue for microscopic study (biopsy). The necessary operation of arthrotomy is simple in some joints, as in the knee; in others,

for instance, the hip, it is a procedure of magnitude.

During the past few weeks I have conceived the idea that probably we may be able to examine a joint cavity and obtain from it the necessary material for microscopic study without performing arthrotomy.

By means of direct or reflected light surgeons of to-day are already inspecting various other cavities of the body with the cystoscope, the urethroscope, the otoscope, the proctoscope, and the esophagoscope. All of these instruments permit direct, or indirect, vision through a tube.

So far my efforts have been confined to the knee-joint in the cadaver and to the pathological specimen. Thus far I have availed myself of a simple otoscope modified by lengthening the tube (speculum). It is probable that this instrument is a far cry from the one which will finally be called the "arthroscope."

The "tube" of the simple instrument above mentioned is provided with a stylus and is inserted, trocar fashion, into the joint. After removing the stylus the balance of the otoscope is attached, and inspection of the joint cavity is made. In the knee-joint of the cadaver one can visualize most of the articular surfaces, portions of the semilunar cartilages, a considerable extent of the synovial surface of the joint proper and of the bursa suprapatellar.

We ought not only to be able to see through this tube inserted into the joint, but, like the genito-urinary surgeon, we ought to be able with suitable instruments to procure from the joint the necessary pathological material for microscopic study.

As I conceive it, the performance of arthroscopy in the living ought not to be more distressing to the patient than a simple aspiration, provided local anesthesia is employed.

Further communications will follow.

BOOK NOTICES

THE SURGICAL CLINICS OF NORTH AMERICA. Vol. 4, No. 6, December, 1924. Lahey Clinic Number. Published bimonthly by W. B. Saunders Co., Philadelphia.

This number will appeal especially to anyone interested in the thyroid. Dr. Lahey's articles are well written, and contain many valuable practical pointers clearly presented. He traces the evolution of the multiple-stage operation for toxic goiter and describes the technic used by him. He feels that the use of Lugol's solution has been a great advantage in the pre-operative treatment of some cases, but that sometimes it has failed, and that, in very toxic cases, it should not be allowed to replace pre-

liminary pole ligations. X-ray treatment of goiter is opposed because of the greater time needed for obtaining effects, the lower percentage of cures, the higher percentage of recurrences, and the greater danger of myxedema.

Complicating disturbances of the heart, larynx, and eyes are discussed in separate articles. Another article deals with difficulties of diagnosis.

The following subjects are well presented by various members of the Lahey Clinic and are well illustrated:

Simple cysts of the kidney.

Non-calculous ureteral obstruction.

Treatment of common duct biliary fistulæ.

Treatment of duodenal fistulæ.

Differentiation of functional disease of the colon from appendicitis and cholecystitis.

T. H. SWEETSER, M.D.

MODERN METHODS OF AMPUTATION. By Thomas G. Orr, A.B., M.D., F.A.C.S. Professor of Surgery, University of Kansas. 125 illustrations. St. Louis; C. V. Mosby, 1926.

In this monograph the author has treated his subject very concisely and in a very practical way. The operations included are the modern recognized standard operations.

The author has especially stressed the importance of function. Amputation of the upper and lower extremities, as well as the subject of treatment of the stump, is given in detail. The author has also included just a brief description of cinematoplasty amputation and artificial limb-fitting.

This monograph can be highly recommended to all surgeons and will be found especially helpful to the man who does amputation somewhat infrequently.

—E. A. REGNIER, M.D.

EARS AND THE MAN: STUDIES IN SOCIAL WORK FOR THE DEAFENED. By Annetta W. Peck, Estelle E. Samuelson, and Ann Lehman, with an introduction by Wendell C. Phillips, M.D., President-Elect of the American Medical Association. Philadelphia: F. A. Davis Company, Publishers. 1926. Price, \$2.00.

This little book is a study of social work among the deafened, and outlines plans for their rehabilitation. It is a book that is of interest, not only to the deafened, but also to the specialist in otology, the psychiatrist, and the educator. Each chapter and phase of the work is illustrated by typical cases. Recommendations are made for treatment, both medical and social for different classes of deaf people.

The attitude of the writers toward the evils of "quackery" in otology is highly commendable.

—W. E. CAMP, M.D.

PERSONAL AND COMMUNITY HEALTH. By Clair Elsmere Turner. Pp. 426; 53 illustrations. Price, \$2.50. St. Louis: C. V. Mosby Company. 1925.

This book is a valuable treatise on nutrition, sanitation, and hygiene. It is written in simple, concise language easily understandable by the laity. It would be especially useful to local health boards, school boards, and welfare boards, and to those in charge of the health of employees of large manufacturing plants.

—W. M. W. MOIR, M.D.

THE JOURNAL-LANCET

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THE PREVAILING DISEASES

Whatever diseases are prevalent in this part of the country now, there seems to be some ill-defined cause for them, and the probabilities are that the majority of them are the sequelæ of influenza. It is hardly possible to differentiate between that and other bacterial conditions. Probably many of them are called "la grippe" cases, but the majority of them are called "colds." However, it seems to be well established that many of the sinus troubles of which people are complaining are due to a recent, or an old, most likely an old, attack of influenza or la grippe. In spite of the relief which is given to these people by surgery or draining out of the sinuses, the general conditions do not improve very much, and the patients complain from time to time of uncomfortable disorders. Then, too, there are a large number of patients who have gastro-intestinal disorders, commonly loss of appetite, nausea, vomiting, and diarrheal disturbances. In these cases, too, we find the same tendency to recurrences of the attacks. They get better of their diarrhea for a time, and then, from exposure to unseasonable weather, to cold or draught, the attack immediately recurs. It may be, too, that the diet of the individual has something to do with it, but in the general experience of medical men diet has little to do with it. It is due again to an aerial condition in which prob-

ably many points of the mucous membrane, wherever it lies, have been lighted up, and a renewal of the attack begins.

Another type of disorder which is common, apparently, is pain in the sciatic region following pains in its distribution in various layers of the skin or muscles of the leg, but none of them incapacitate the individual entirely as do the cases of sciatic neuralgia or sciatic neuritis; fortunately, the latter is an extremely rare condition. Then, too, the people who complain of general pains and aches following a cold have the same line of symptoms recurring from time to time, and there seems to be a general feeling that most of these troubles, most of these conditions which are not easily diagnosed, are safely put under the post-influenzal type of disorder. The remedy is quite another thing, because the intensity of the disease, in the first place, or the relapse in second attacks may be just as bad as the original attack, and the time element seems to be most important. Again we might refer to the fact that rest in bed for a sufficient length of time is the really important basis of treatment. Many men find that their patients improve under the various sera that are used,—the combined influenza serum, and probably the pneumonic cases under the new antipneumonia serum. Various remedies, of course, are used, some simple and some rather complicated.

A great many of these patients are prone to give up their work, give up their occupation, and go to bed for an indefinite time, and in some instances it is wholly unnecessary. Those who are properly constituted, those who have a good constitutional history behind them, are better off out of bed than they are in bed, provided no acute conditions are present which would suggest further rest. It is generally conceded, too, that operations of various kinds, whether on the sinuses or other regions of the body should be discouraged until the patient is in better condition, for a great many have found that after operation the patients do not recover as promptly as they should; they are slow in convalescing, and not infrequently many patients die from too zealous work of the operator. There seems to be a general lack of resistance. People ordinarily considered pretty well become when taken sick potentially serious cases, and perhaps that is one reason why we hear of so many deaths among people between forty and sixty years of age.

That the weather has a good deal to do with the condition is shown by the fact that these states exist all over the world. In New Zealand

and Australia the older inhabitants say they have never seen anything like it in their recollection. This, of course, is a stock phrase and is sometimes meaningless. But in Africa when the temperature goes up during the sunlight to 164° and remains 112° in the shade there is a supposition that it is an unusual state of affairs. And doubtless Minnesota, and the United States in general, have suffered from these varying conditions in climate. Some scientist has advanced the idea that the ocean currents have much to do with the climate of the world and that one hundred and ten years ago the ocean conditions were as they are now. But he was not alive 110 years ago, and perhaps he does not know except as he has read from the records. At all events, something is going on that impoverishes the health of the people, and they are having a hard time, and it requires a good deal of optimism to keep up their courage and improve their general state of health.

REST AS A THERAPEUTIC AGENT

The word *rest* as a therapeutic measure is probably as grossly misunderstood as any word in the medical dictionary. The average physician and layman when they speak of rest as a remedy in disease have a conception of a few days instead of weeks or months. Many physicians advise their patients to "take a few days rest," and very often regardless of their actual physical disability. Rest means relaxation not of the body alone, but of the mind, and the combination of the two is most essential. Very few people realize that the word rest means something more than is ordinarily conveyed by the word, hence it is the word itself that is misapplied or abused. This applies, of course, to acute or persistent diseases and perhaps can be best illustrated by suggesting a case of tuberculosis or mental disease, or many other forms of nervous disorder.

Many of our patients try to rest at home, and particularly those of the tuberculous and nervous types. They are handicapped from the start because they are in their old surroundings; they are with the family and in the midst of the responsibilities of the household. Their business friends are not kept away from them; they have frequent contact with the outside world; and the result is that they have no time to rest mentally. In a case of tuberculosis, for instance, the victim has to be trained and taught by his physician to accept his condition as philosophically as possible under the circumstances. And even though his means be small, or even if he is in a hospital

for tuberculous patients, he may even then adopt a philosophy that will be helpful and restful to him. He must put his mental processes in order and not permit the daily grind outside to affect him at all. This, of course, is practically impossible if the patient is at home or in a local institution.

A man of the writer's acquaintance contracted tuberculosis some years ago. His doctor was an expert who was familiar with the disease and with the attitude of the patient, and he taught him much that in later years was of great service to him; that is, he taught him indifference to outside influences, indifference to time and efforts both great and small. So that after a few months at home under favorable circumstances and in spite of the fact that his business friends would not let him alone, his physician very wisely transferred him to a strange place, far distant, so that the rabble and so-called inquisitory friends could not interfere. He was for eight months in a sanatorium, and during that time he had but one visitor and that a near relative who stayed only fifteen minutes; but before the end of the visit the patient was nervous and shaking with a tremor which was markedly noticeable. However, the philosophy he had learned in the earlier stages of his disease kept him cheerful, and he minded not at all whether his physician came in at nine o'clock or ten o'clock in the morning, nor whether his nurse was late or early; neither did he mind whether his meals were hot or cold, or whether they were on time or not. He learned his lesson early and profited thereby so that at the end of eight months he came home fat and well. He had recovered from his tuberculosis. The reason he recovered was that he was rested, physically and mentally. He knew of the unrest of others in the sanatorium because in the adjoining cottage was a nervous woman who wanted everything done for her at a specified time and wanted to run her case herself, as many patients do. The result was that she did not get well, but lingered on in the hospital long after this man had returned to his business.

It must not be considered a personal matter to insert a suggestion as to the menace of the visiting people who go to our tuberculosis sanatoria to see their friends. They are properly described in one word—they are pests, and nothing else fits their case. They take the entire family on Sunday afternoon or Sunday morning and go for a visit,—they and their brood, invading the quietness of the patient's room and creating all sorts of disturbances. Unfortunately, they do not even

know it themselves, but the patient knows it. He has been annoyed, and the family visits really do him harm and no good. Why do the superintendents of tuberculosis sanatoria or any other form of sanatorium permit this annoyance of hordes of visitors? The writer remembers seeing, at one of our local hospitals here, both the first and second floor corridors filled with people on a Sunday afternoon. There must have been between 200 and 300, and when he asked the superintendent about it he was told that it had become a custom, now impossible to relieve; that the people demanded to see their friends who were sick, and it was easier to let the crowd in than it was to attempt to explain why it was necessary to make them stay out. This refusal of the visitor seems to the lay people a very heartless measure. They know that their sick friends want to see them, and perhaps they do; and they think they could cheer up the sick better than anyone else, while as a matter of fact they simply leave a mark of injury by their discouraging attitude and unfavorable comments. Yet the thing goes on without any effort on the part of the hospital authorities to educate the people to the fact that visitors are unnecessary in the sick-room, and particularly in hospitals where contact diseases prevail. On the other side there are the nervous and mental cases, some of them depressed, anxious, and worried because they do not know how to get at peace with themselves, that is, they do not know how to rest. The same condition is found there at times unless the authorities say frankly, "No visitors." This is done in other institutions. But can you imagine one who is worried, trying to get his mind in order, and trying to rest, being disturbed by a fatuous feeble-minded visitor who sometimes does not know enough to come in out of the rain and who knows absolutely nothing about the necessity of leaving the patient alone where he can be quiet and at peace?

It has been found by experiments, by observation, and by experience that the average sick person with either of the diseases above mentioned has a hard time for a few days in settling down to the routine and the training of hospital life. But they find in the course of time that a change has come over them. They have ceased from their agonies, they have given up their struggles and they begin to relax—sometimes in a few days, sometimes it requires weeks, and then their improvement begins. If it goes on uninterrupted recovery seems probable. And demonstrations of these patients have shown that by keeping them comfortable, well fed, under a regular sys-

tem of care, giving them plenty of rest day and night, they get an astonishing amount of sleep and they are satisfied and cheerful and progressively happy. Sometimes in surgical cases the surgeon in charge seems to know enough to keep his patient very quiet and to keep out all sorts of things that would disturb or annoy the surgical prospect. The surgical recovery is much more rapid under those circumstances. But if interrupted or if visitors are allowed to swarm the room as they commonly do (and in the opinion of the writer some of them ought to be taken out and shot at sunrise), their surgical recovery is slow. Then, too, if the surgeon considers many of his cases, or the internist considers his cases, from a neurological, as well as a surgical or internal, point of view he finds that what they need most is rest. And it is safe to say that the small percentage of people who are sick get the very thing they actually need, particularly if they have intermingled with their surgical or tuberculous symptoms a nervous system that is uncertain and unstable. There ought to be "rest clubs" formed, now that we have almost every other kind; and they should be composed of those who are determined to visit the sick; they should be called to order in a large room and should be talked to by trained men, instructed in their duties toward the sick, and taught after they have received the idea (if it is possible for them to grasp it) that further interference with the recovery of people in bed who need rest would not be tolerated. They should also be instructed as to the nature and manner of conversation; that encouragement and optimism are valuable tonics and that such terms as "you do not look very well to-day" depress the patient. Who would like to be the first president of the first "rest club" organized?

DR. RUSSEL C. CARMAN

The last time the writer saw Dr. Carman was at the meeting of the Post-Graduate General Assembly of America during its session in St. Paul. Dr. Carman stood on the stage and read a paper on his life work as if nothing mattered, and yet he knew, as did many of his near friends, that he was doomed soon to die from the very disease he was discussing. Yet he looked radiant, indifferent to the outcome, and at peace with the world. This was evidently at about the time he had been x-rayed, and he made his own diagnosis from one of the plates which his associate handed him. His calm reply was, "That is cancer, incurable." However, he kept on with his work and did many other things in the way of writing that he wanted to get in form before he left this earth.

His work on "The Roentgen Diagnosis of Diseases of the Alimentary Canal" is probably one of the best books ever written on the subject, and will be a standard text-book for many years. He also had written articles for various medical journals on the same line of subjects, which have always been looked upon as classical.

Dr. Charles Mayo said that Dr. Carman was a remarkable man, and he did not think that he had his equal in roentgenology anywhere in the world. Dr. Carman occupied the position of chief of the division of roentgenology at the Mayo Clinic and was professor of that subject in the Mayo Foundation, the graduate school of the University of Minnesota. Dr. Carman was advised to rest and take care of himself, but he kept on with his work until he could no longer keep up, and within two weeks of his death he was in the clinic room, working and instructing as usual.

The forthcoming volume of Dr. Carman will probably be much more extensive than the one above referred to.

Dr. Carman left a wife and his mother, Mrs. J. J. Oliver, of St. Paul. He was born at Iroquois, Ontario, in 1875. He received his medical education at the Marion Sims College of Medicine, St. Louis, and Johns Hopkins University. He practiced medicine in St. Louis until 1912, when he joined the Mayo staff. He had occupied the presidency of the American Radiological Society, and he was president of the American Roentgen Ray Society when he died. He was a member of the Minnesota State Medical Association, the American Medical Association, the American College of Physicians, the London Roentgen Society, the Nordisk Forening for Medicine Radiologi and the Association of Resident and Ex-resident Physicians of the Mayo Clinic.

Dr. Carman was widely known for his simplicity, his cordiality, and his human attitude, consequently he was a very popular and beloved man. He will be greatly missed, not only in Rochester, but all over the country.

THE TREATMENT OF TUBERCULOSIS FROM A NEW VIEWPOINT

Dr. H. A. Burns presents a new and interesting point of view from which to consider the treatment of tuberculosis; and his paper, with its discussion, which appears on another page of this issue, will be found of special interest at this time when the psychology of both patients and physicians is under consideration by the expert as well as the general physician.

NEWS ITEMS

Dr. R. D. Benson has moved from Minneapolis to Sidney, Mont.

Dr. Donald K. Bacon, of St. Paul, was married last week to Miss Willette Brandt, of Cambridge.

Dr. N. H. Gillespie, of Duluth, has returned home from a three months' visit in the clinics of Europe.

Dr. A. Elliott Vik has moved from Winthrop to Minneapolis and has offices at 1523 East Lake St.

Dr. Walter H. Ude, of Minneapolis, was married last month to Miss Valborg Pettersen, of St. Paul.

Dr. Ernest R. Anderson, of Minneapolis, was married last month to Miss Dagmar Cassel, of St. Peter.

Dr. L. P. Hiniker, of St. Paul, was married last month to Miss Elizabeth B. Sullivan, of Minneapolis.

Dr. William A. Harrison, of Minneapolis, was married last month to Miss Charlotte Stevens, also of Minneapolis.

Dr. Hamline A. Mattson, of Cannon Falls, was married last month to Miss Esther Westman, also of Cannon Falls.

Dr. Russell D. Carman, of the Mayo Clinic, died last month at the age of 51. Further notice of Dr. Carman appears in our editorial columns.

Dr. A. G. Wethall, of Minneapolis, is now in New York City and will soon leave for Europe to spend several months in the clinics of Vienna.

Dr. H. H. Aldrich, of Hitchcock, S. D. has fitted up two rooms in his residence for emergency surgical work and especially for obstetrical work.

The Medical Reserve Officers Training Corps closed its encampment at Fort Snelling last week. Fort Snelling has been made the permanent training camp of the Corps.

The U. S. Veterans' Bureau has purchased fifty acres of land near Fargo, N. D., on which a veterans' hospital to cost \$300,000 will be erected by the Government.

Dr. Theodore Harcum, a pioneer physician of Brown Valley, died last month at the age of 70. He was a graduate of the General Medical College of Chicago, class of '86.

Dr. A. T. Floew, Harvey, N. D., has returned from a year's work in the clinics of Europe. Dr. Floew was accompanied by his wife, and they travelled through the principal countries of Europe.

The Great Northern Railway Surgeons Association held its annual meeting last week in Winnipeg. Ten of the sixteen papers presented were by professors of the University of Manitoba at Winnipeg.

Dr. Alban F. Gaalaas, of Minneapolis, was married last month to Miss Margaret M. Cook, also of Minneapolis. Dr. Gaalaas graduated from the University of Minnesota Medical School in January.

Miss Winifred Gray Whitman, a Minneapolis girl, who graduated last month from the Medical School of the University of Minnesota, received the highest honors given by the Medical School in several years.

Dr. Torvald Vaaler and Dr. A. R. Ellingson, 1924 graduates of the Medical School of the University of Minnesota, have entered into partnership with Dr. R. O. Larsen, of Detroit (Minn.), who is a 1907 Minnesota graduate.

Ambrose, N. D., is to have a community hospital. The plans for the building will soon be completed. It will have a capacity of eleven beds with living quarters for the resident physician. The cost of the building will be about \$15,000.

The Sioux Valley Medical Association will hold its annual meeting the latter part of August in Sioux Falls, S. D. The Association was organized in Sioux Falls thirty years ago, and will celebrate its thirtieth anniversary with appropriate exercises.

Dr. E. L. Schield, who has worked for some time in the pathological department of the Medical School of the University of Minnesota, has accepted the position of pathologist in the Mankato Clinic, which is now moving into its handsome new building.

The Central Minnesota Medical Society held a summer meeting at Willmar last month, and were entertained by Dr. W. P. Robertson at his summer home on Lake Ripley. Dr. A. T. Branton, of Willmar, presented a paper on "Symptoms and Diagnosis of Gall-Bladder Diseases."

At the annual meeting of the alumni of the Medical School of the University of Minnesota, held last month, the following officers were elected: President, Dr. O. S. Wyatt, Minneapolis; vice-president, Dr. M. G. Bergheim, Hawley;

secretary-treasurer, Dr. Donald H. Daniel, Minneapolis.

Dr. Robert C. Murdy, son of Dr. R. L. Murdy, of Aberdeen, S. D., is doing postgraduate work in cranial and facial surgery in the Harvard School of Medicine and the New York Post-Graduate Medical School. He is a graduate of the Medical School of Minnesota, class of '22. He will resume practice in the Aberdeen Clinic in September.

The week of July 12-17 will call many distinguished medical men to Billings, Montana, to attend the meetings of the State Medical Association, the State Health Association, and the State Academy of Oto-Ophthalmology, whose meetings cover the whole week. Drs. F. L. Adair and F. C. Rodda, of Minneapolis, will present papers before the State Medical Association, which meets on the 16th and 17th.

Dr. F. M. Pottenger, head of the Pottenger Sanatorium at Monrovia, California, came to Minneapolis last week to give several talks to the tuberculosis institute being conducted by the University of Minnesota. Dr. Pottenger is a delightful and forceful speaker and an instructor of very high rank. A luncheon was given to him by the Hennepin County Medical Society in the Y. M. C. A. building, at which Dr. Walter J. Marclely presided.

Two major and a number of minor appointments were made in the University of Minnesota Medical School staff at the recent meeting of the Board of Regents. Dr. Earl Wilhelf Stenstrom, a distinguished Swedish physician, comes from the New York Cancer Hospital at Buffalo to the Elliott Memorial Hospital; and Dr. Ralph G. Mills, professor of pathology in the University of Colorado, to a similar position in the Mayo Foundation, the graduate school in medicine of the University.

It was a matter of general and very great regret that Dr. John H. Rindlaub, of Fargo, president of the North Dakota State Medical Association for 1925-26, was unable on account of illness to attend the annual meeting of the Association in May at Minot. We are glad to be able to report that Dr. Rindlaub is somewhat better, although he may not be able to resume his practice for some time to come. He has gone to California for a rest.

Dr. G. S. Adams, Superintendent of the Yankton (S. D.) State Hospital, completed in June twenty-five years of service at this institution, nearly six years of which he has been the head

of the hospital. Dr. Adams, who is not yet fifty years of age, entered the field of psychiatry immediately after graduation from Rush Medical College, in 1901, and three years later became assistant superintendent. After the death of Dr. L. C. Mead, in January, 1920, he was appointed superintendent. Among the other social affairs celebrating his twenty-fifth anniversary was a reception given by the employees of the institution.

To encourage investigations of the alimentary tract function, Dr. Frank Smithies, Chicago, has presented to the School of Medicine of the University of Illinois, bonds in amount sufficient to yield annually, in perpetuity, not less than \$100. This fund is known as "The William Beaumont Memorial Fund" and the income therefrom, as "The Annual Beaumont Memorial Award." The award is to be made each year to the research or clinical investigator who, in the judgment of a faculty committee, has contributed the most important work during the year in the field designated. The first award will be made in 1927. Manuscripts covering investigations do not have to be entered specifically for the award, nor is it required that they be submitted to the faculty committee. The award is to be granted by the committee after it has considered carefully all investigations published during any year in periodicals throughout the United States. Thus, the award is available to workers in any institution, and is not confined to members of either faculty or student body of The University of Illinois.

Annual Meeting of the North Dakota Academy of Ophthalmology and Otolaryngology

The North Dakota Academy of Ophthalmology and Oto-Laryngology met in Minot, N. D., Monday, May 24, 1926, at 8 P. M.

The President, Dr. M. B. Ruud, Grand Forks, delivered the president's address.

Dr. William H. Lewis, of St. Paul, Minn., read a paper entitled, "Incipient Glaucoma."

Dr. J. S. Pritchard, Battle Creek, Mich., read a paper entitled, "The Relation Between the Upper and the Lower Respiratory Tract." These papers were discussed by Drs. D. A. Stewart, Ninette, Manitoba; L. A. Schipfer, Bismarck; Kent E. Darrow, Fargo; Thomas Mulligan, Grand Forks; Martin Rindlaub, Fargo; and J. S. Pritchard, Battle Creek, Mich.

The Fifty-eighth Annual Meeting of the Wabasha County Medical Society, Minnesota, Thursday, July 8, 1926

PROGRAM

Men' Club business meeting, 11:00 A. M.

Dinner at Hotel Anderson, 1:00 P. M.

Scientific session at Club Rooms, 2:00 P. M.

"Some Phases of Medical Economics." President's Address. Dr. D. S. Fleischhauer, Wabasha.

"Immunization and Serum Treatment, Scarlet Fever and Diphtheria." Dr. W. P. Larson, Minneapolis.

"Relation of the Sanatorium to the General Practitioner." Dr. George McL. Waldie, Buena Vista Sanatorium, Wabasha.

"Cod Liver Oil and Other Vitamin Containers in Infant Culture." Dr. J. T. Christison, St. Paul.

The Society and guests will be entertained by the Wabasha members. Ladies in the family are invited to accompany physicians attending. There will be a reception for visiting ladies at the home of Dr. and Mrs. Fleischhauer immediately following the dinner.

DR. W. F. WILSON, Secretary,
Lake City, Minn.

Program of the Annual Meeting of Northern Minnesota Medical Association, Crookston, August 9 and 10

1. Dr. Hilding Berglund, Minneapolis. "Constipation."
2. Dr. John Fulton, St. Paul. "Lenticular Opacities."
3. Dr. H. P. Ritchie, St. Paul. "Congenital Cleft Palate and Lip: The Four Operations."
4. Dr. Ivar Sivertsen, Minneapolis. "Surgery of the Spleen."
5. Dr. Arthur S. Hamilton, Minneapolis. "Diagnosis and Treatment of Epilepsy and Migraine."
6. Dr. W. S. Lemon, Rochester. "A Clinical Survey of Bronchiectasis."
7. Dr. W. E. Sistrunk, Rochester. "The Management of Goiter."
8. Dr. L. A. Buie, Rochester. "The Diagnosis and Treatment of Rectal and Anal Diseases Applied to General Practice."
9. Dr. Gage Clement, Duluth. "Indications for Physiotherapy."
10. Dr. T. L. Chapman, Duluth. "The Advantages of Local Anesthesia in Thyroid Surgery."
11. Dr. F. F. Callahan, Pine City. "Diagnostic and Prognostic Significance of Serous Pleural Effusion."
12. Dr. J. F. Norman, Crookston. "Intestinal Obstruction."
13. Dr. J. A. Lepak, St. Paul. "Hodgkin's Disease in the Future."
14. Dr. E. Z. Shapiro, Duluth. "Pathology in the Urinary Apparatus."

15. Dr. R. G. Allison, Minneapolis. "The X-Ray Characteristics of Certain Types of Mediastinal and Pulmonary Diseases."
16. Dr. B. S. Adams, Hibbing. "Procrastination in Surgery."
17. Dr. T. A. Peppard, Minneapolis. "Post-pneumonic Atelectasis."
18. Dr. J. H. Moore, Grand Forks, N. D. "Pain Relief in Child-birth."
19. Dr. W. C. Nichols, Fargo, N. D. "Certain Phases of Myocardial Degeneration."
20. Dr. C. B. Wright, Minneapolis.

BANQUET PROGRAM—MONDAY EVENING,

AUGUST 9, 1926

1. Dr. O. J. Hagen, Moorhead. Presidential Address.
2. Dr. Arnold Schwyzer, St. Paul. "Osteomyelitis."
3. Dr. Morris Fishbein, Chicago. Address.

CLINICS—TUESDAY MORNING,

AUGUST 10, 1926

1. Dr. Hilding Berglund, Minneapolis. "Internal Medicine."
2. Dr. Carl Larsen, St. Paul. "Eye, Ear, Nose and Throat Diseases."
3. Dr. F. W. Schlutz, Minneapolis. "Pediatrics."
4. Dr. E. L. Tuohy, Duluth, and Dr. H. L. Ulrich, Minneapolis. "Internal Medicine."
5. Dr. Arnold Schwyzer, St. Paul. "Surgery."

Locum Tenens Work Wanted

By an experienced physician licensed in Minnesota and North Dakota. Address 172, care of this office.

Position as Locum Tenens Wanted

During the months of July, August, and September. Address Dr. B. E. Reilley, care of the Ancker Hospital, St. Paul, Minn.

Locum Tenens Work Wanted

By a recent Minnesota graduate now doing internship work in Ancker Hospital, St. Paul. Address 171 care of this office.

Practice in Minneapolis for Sale

Practice and office fixtures and furniture in an excellent location in Minneapolis, on the south side, are offered for \$350. Address 177, care of this office.

Good Opportunity

To join a small group in a community of 40,000. Specialty: obstetrics; children's diseases; eye, ear, nose, and throat work; or internal diseases. Address 169, care of this office.

Specialist Wanted

An Eye, Ear, Nose, and Throat man is wanted to join a Minneapolis Clinic. Ability and personality necessary. Salary leading to a partnership arrangement. Address 165, care of this office.

Minneapolis Office in Fine Location for Rent

Dentist on north side wants a physician to join him in rental of office in a new building. No physician within several blocks. Call Hyland 0262.

Locum Tenens Wanted

For country practice in Minnesota from July 15 to August 15. Middle aged or elderly man wanted. State salary wanted. Address 173, care of this office.

Office Position Wanted

In Minneapolis by a good stenographer and bookkeeper. Can speak German fairly well. Best of references. Moderate wages. Address 175, care of this office.

Electric Sterilizer Wanted

I desire to buy a second-hand electric sterilizer for office use (alternating current). State particulars: size, make, price, how long used, etc. Address 174, care of this office.

Locum Tenens Wanted

Beginning June 27th to August 1st for general practice in a North Dakota town of 350 inhabitants. Unopposed with large territory. Use of office and equipment free. Can have what you make. Address 168, care of this office.

Partnership Opening

I am looking for a doctor, preferably a German-speaking and a catholic, capable in surgery and gynecology, to join me in partnership and operation of a small hospital in Minnesota. Good references and \$2,000 required. Address 164, care of this office.

Drug Store for Sale—Unusual Offer

Clean stock of merchandise and soda fountain. Own building with living apartments on second floor. Location in good town of 400 in South Dakota, and large territory to draw from. No competition. Business is good. Priced to be attractive. Don't pass this rare bargain. Address 176, care of this office.

Fine Location and Fine Office in Minneapolis

There is a splendid location in a fast-growing section with no competition at 2300 West 50th St. Steam-heated modern offices at reasonable rent. End of the Oak and Harriet carline in fine new section of city. Inquire at above location or telephone Walnut 2413 (Christianson Drug Co.) or Hyland 3129 (owner of property).

Laboratory and X-Ray Technician Wants Position

Efficient and dependable technician desires position. Is a graduate in clinical laboratory work and has had eight years' experience in doctor's office and hospital as x-ray, laboratory, and physiotherapy technician and assistant. Has had one year's experience in hospital nursing and some training in anesthetics. Prefer position in office or clinic. Will go out of city. Excellent references. Address 160, care of this office.

THE JOURNAL-[~]LANCET

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TRANSACTIONS OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION—1926

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PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE NORTH DAKOTA STATE MEDICAL ASSOCIATION

FIRST SESSION—MONDAY, MAY 24, 1926

The first meeting of the House of Delegates was called to order at the Masonic Temple, Minot, at 10:45 p. m. by the First Vice-President, Dr. Thomas Mulligan, Grand Forks.

THE CHAIR: I will ask the Secretary to call the roll.

The Secretary then read the roll-call and announced that there were eight Councillors and eight Delegates present, making a total of 16, which is a quorum.

THE CHAIR: Our President, Dr. John H. Rindlaub, is very ill in the hospital, and I will appoint a committee, consisting of Drs. James Grassick, Charles MacLachlan, and G. M. Williamson, to send suitable resolutions to Dr. Rindlaub.

The next order of business will be the reading of the minutes of the last meeting.

THE SECRETARY: As the minutes of the last meeting were published in THE JOURNAL-LANCET, I will read only a synopsis.

It was moved that the minutes be approved as read. Motion seconded and carried.

THE CHAIR: We will now have the Secretary's report.

Dr. Alex. J. McCannel presented the following report:

SECRETARY'S REPORT

Again I wish to thank the secretaries of the component societies for their loyal co-operation during the past year. Most of the secretaries in office during 1925 were re-elected for 1926. This is a good policy, for no one adds so much to the success of a local society as a well trained secretary.

In this connection I wish to impress upon the members of this Association the necessity of prompt payment of dues. The local secretaries are required to forward a list of their paid-up members before the first day of April in each year and the State Secretary is required to report on that date to the American Medical Association all who have done so and are in good standing. This means that about half of the members of this Association were in good standing on April 1st, this year, and two societies, Grand Forks and Southwestern Districts, have only within the last week been restored to good standing.

The membership of the Society as reported a year ago was 370. During the balance of 1925 this was increased by 26, making a total for the year of 396.

Our present membership is 387. Of the local societies, Cass County, Devils Lake District, Grand Forks District, Kotana, Sixth District, Southern

District, Stutsman County and Tri-County show gains—a total of 27. Sheyenne Valley and Traill-Steele have the same membership as last year. Northwestern District, Richland County, Southwestern District, and Stark County have fallen off, a total of 10—or a net increase in membership of 17.

The Aetna Insurance Company has handled the group insurance during the past year in a very satisfactory manner, and its representatives have shown a desire to co-operate in every way with our Association. Their co-operation will in the future be of much assistance in keeping our membership in good standing.

Since my last report an effort has been made to connect up the State Association more closely with the component societies by having each local society put on a State Officers' meeting and also put the names of the State Officers on their mailing lists so that they could have notice of all meetings. Several of the societies availed themselves of these suggestions, and good meetings were held.

I am sorry that my absence from the state last winter prevented me from accepting more than one of these invitations, but I was able to visit the Tri-County Society, where a very interesting meeting was held.

THE JOURNAL-LANCET has been anxious to publish all reports of society meetings and other news of general interest. A few of the local secretaries have been sending in reports of their meetings. This is an excellent practice and should become general. Nothing so contributes to improvement in programs as publicity.

I attended the Conference of State Secretaries held at the A. M. A. headquarters last November. This meeting was very instructive. A complete report of the proceedings appeared in the *Bulletin*, and for that reason I shall not attempt to repeat them, but will mention only one feature. Especial emphasis was placed upon the need of educating both the laity and the medical profession in the value of periodic medical examination of the apparently healthy.

As shown by the report of our attorney, Mr. Bosard, the case of Mabel Neil vs. Dr. Z. P. King has finally been settled and dismissed. This, I believe, concludes all cases that we will be called upon to defend. The expense in connection with dismissing this case was \$50.00, which has been paid.

Respectfully submitted,

ALEX. J. McCANNEL, Secretary.

It was moved that the report of the Secretary be adopted. Motion seconded and carried.

THE SECRETARY: I have a telegram from the President, Dr. Rindlaub, expressing his regret at being unable to attend the meeting.

I have also a communication from Dr. Woodward, Secretary of the Bureau of Legal Medicine of the American Medical Association, which should be referred to the Committee on Public Policy and Legislation.

I have another communication regarding the amendment to the Harrison narcotic act and one in reference to the Sheppard-Towner bill, both

of which can be taken care of by the Committee on Public Policy and Legislation.

I move that these three communications be referred to this Committee. Motion seconded and carried.

I have a communication from Dr. John M. Dodson dated February 2, 1926, regarding the manuals for health examination. I move that it be referred to the Council. Motion seconded and carried.

I have a communication from Dr. Henry Waldo Coe, who was the second president of our Association. We sent him a copy of our program with an invitation to come to our meeting. This in response to the invitation.

I have a communication from the Aetna Insurance Agency of Bismarck in reference to Dr. Frisch. I move that it be referred to the Committee on Medical Defense. Motion seconded and carried.

I have a letter from Dr. L. G. Eastman, of Hazen, N. D., regarding fees for insurance examinations. I move that that be referred to the Committee on Public Policy and Legislation. Motion seconded and carried.

THE CHAIR: The next order of business is the report of the Chairman of the Council.

REPORT OF THE CHAIRMAN OF THE COUNCIL

Dr. F. R. Smyth, Bismarck: The Council has had considerable correspondence with Major Daniel Wright, of Jamestown, in reference to having a park dedicated to the memory of Dr. J. S. Weizer, who was a military surgeon with Sibley, in 1863, against the Indians in this state. There is a quarter section of land where Dr. Weizer is buried which is held by outsiders who are asking \$2,500.00 for it. Dr. Wright desires to know if the North Dakota State Medical Association is willing to provide this memorial. The Council did not feel that the Association was justified in buying this piece of land, and the land lies in such a way that it is not practical to purchase only a small area. Major Wright is going to hold memorial services on this land on May 30 and would like to have our Association represented.

DR. JAMES GRASSICK, Grand Forks: To buy the whole quarter section is out of the question, and it is so situated that it would be difficult to buy less. Would it not be sufficient to have a memorial tablet placed there?

DR. SMYTH: I suggested that to Major Wright, but he was not satisfied. He thought the grave should be left as it is because it is already marked by the comrades of Dr. Weizer.

DR. E. A. PRAY, Valley City: Perhaps the family should be consulted. His brother died

recently, and a Grand Army Post was named for him.

DR. SMYTH: I thought the Association might feel like donating \$100.00. I suggested to Maj. Wright that the proper way was to get the legislature to make an appropriation for a public park, but he does not think that advisable.

DR. CHARLES MACLACHLAN, New Rockford: Would it not be possible to build a roadway to the grave and have a small section where one driving in could see the grave and turn around and come out. It does not seem as though we should buy the whole quarter section.

DR. P. G. ARTZ, Jamestown: Major Wright told me that the owners will sell only the quarter section. It is a question whether you will make any headway without buying the whole quarter section.

DR. G. M. WILLIAMSON, Grand Forks: I move that a committee consisting of Drs. Artz, Pray, and MacLachlan be appointed to confer with the authorities and to expend \$100.00 if in their judgment it is deemed advisable. Motion seconded and carried.

THE CHAIR: The next order of business is the report of the Treasurer.

TREASURER'S ANNUAL REPORT

May 14, 1925 to May 24, 1926

Assets and Receipts:

Balance General Fund, May 14, 1925	\$1,879.62	
Savings Account	2,153.36	
Liberty Bonds (2) James River National Bank	\$1,000.00	
Interest on Liberty Bonds	42.50	
Interest on Savings Account	45.47	
Dues Received from Secretary	2,040.10	
12½ Per Cent Paid by Commercial State Bank, Carrington	10.00	
Total	\$6,083.08	\$6,083.08

Disbursements:

Eighteen (18) checks numbered 136 to 153 inclusive	\$1,727.02	
Exchange on Checks	1.10	
By Transfer Checking to Savings Account	150.00	
Total	\$1,878.12	\$1,878.12
Balance		\$4,204.96

Distribution of Funds at the Present Time:

General Fund Balance	\$2,059.10
Savings Account to May 21, 1926	1,153.36
Liberty Bonds (2) James River National Bank	1,000.00
Total	\$4,212.46

Check No. 151, Issued to Page Printing Co., Dated November 22, 1925, not cashed	7.50
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Total	\$4,204.96
Total Balance	\$4,204.96
Check received May 24, 1926	10.00

Total	\$4,214.96
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During the year as above noted, we received a payment from the Carrington State Bank, on the eighty dollar claim (\$80.00) we had in the bank at the time it closed. This is the first payment we have received on the same.

Our net increase in assets for the year 1925-1926 over the year 1924-1925 is \$409.95 against an increase the year previous of \$1,734.39.

Respectfully submitted,

Wm. W. Wood, M.D., Treasurer,
North Dakota State Medical Association.

It was moved that the report of the Treasurer be referred to the Council. Motion seconded and carried.

THE CHAIR: The next order of business is the report of the Councilors.

REPORTS OF THE COUNCILORS SIXTH DISTRICT

SIXTH DISTRICT SOCIETY

Dr. F. R. Smyth, Bismarck, Councilor

This Society is in a flourishing condition both as to membership and interest. There are 53 members in good standing, and of the seven physicians practicing in the District who are not included in membership at least five live nearer other local societies and may belong there.

It is now the custom to have a banquet at each regular meeting, and a paper given by some outside practitioner. At the last meeting a very interesting talk was given by Judge Sveinbjorn Johnson, of the Supreme Court, on "Some Aspects of the Dayton Trial."

FIRST DISTRICT

CASS COUNTY SOCIETY

Dr. Kent E. Darrow, Fargo, Councilor

In the First District all but three of the eligible men in the District are members. We meet every month in the fall and winter, and we generally have a banquet. Papers are presented by the local men or by outsiders.

The average attendance is between 30 and 35.

THIRD DISTRICT

GRAND FORKS DISTRICT SOCIETY

Dr. G. M. Williamson, Grand Forks, Councilor

The Grand Forks District includes the counties of Grand Forks, Walsh, Pembina, Cavalier, and Nelson. There are 72 licensed men in these counties, 69 being in active practice.

The secretary of this District reports a paid membership of 62; six of this number live outside the District, but have not transferred their membership to the local societies where they are practicing. That leaves 16 men practicing in this district unaccounted

for as to membership in their local society, but of this number, I am certain, some hold membership in a society that is more convenient for them to attend.

I would suggest that notification of the acceptance of a member outside the territory of a local society be immediately sent to the secretary of the society within whose jurisdiction he lives; in that way more correct records can be kept.

It was partly arranged last year that quarterly meetings would be held. That plan was abandoned and monthly meetings continued. Our programs have been interesting and well attended. On the whole this District is in a healthy and prosperous condition, and splendid co-operation on the part of all members makes the practice of medicine within our borders very satisfactory.

A plan that I have in mind at present and that I wish to suggest to the Councilors of the various districts is that the Councilor in the district be responsible for one meeting and program each year. If that were done he would have an opportunity of meeting the membership officially and discussing with them the problems confronting the officers of his societies.

I believe that the time has come when a Councilor should be something more than a name. The constitution prescribes his duties, and the office should properly function or be turned over to some one who will give it attention.

As Councilor from Grand Forks District Medical Society, it becomes my duty to report the passing of our friend and fellow, Dr. R. M. Evans, of Minto, N. D., January 8, 1926, at the age of 86 years.

Dr. Evans was born at Brockville, Ontario, August 26, 1839, the son of pioneers. He was educated as a teacher, and, like so many of our craft, he engaged as such before taking up the study of medicine. He graduated from the College of Physicians and Surgeons, Toronto, in 1869, and from that date to the time of his demise he devoted his life to the healing art—a period of 57 years. In 1879 he settled at Belleview, near Manvel, Grand Forks County, and was at the time the only physician between Grand Forks and Pembina. In 1881 he removed to Minto, Walsh County, where during his remaining years he continued to practice his profession.

In addition to his medical practice he found time to devote to a solution of the many economic problems that confront a new commonwealth. He was the first county superintendent of schools of Walsh County and held that position for twelve consecutive years. He was also a member of the first Board of Regents of the University of North Dakota. It will thus be seen how far his influence extended in molding the future of our educational institutions.

It was not in these avenues of endeavor, however, that Dr. Evans was most favorably known. It was while doing his day's work, going in and out among the people whom he so long and so acceptably served, that his influence was most keenly felt. In this respect he was a veritable "Weelum McClure," a type of the revered family doctor that is gradually getting scarcer as time thins the ranks. Skillful, tactful, sympathetic, clean, honorable, wise, he ministered to the therapeutic wants of his people, warned them of the pitfalls that were hidden from view, reproved them when they left fair virtue's

path, guided them along ways of safety, consoled with them in suffering, rejoiced with them in their hours of pleasure, and counselled with them on matters pertaining to their economic and social welfare.

His memory, ever fragrant among those who knew him best, is a monument more enduring than marble or bronze.

FOURTH DISTRICT

NORTHWEST DISTRICT AND KOTANA MEDICAL SOCIETIES

Dr. E. M. Ransom, Minot, Councilor

I submit a report of the proceedings of the Kotana Medical Society for the period from May, 1925, to May, 1926, as furnished by Dr. Carlos S. Jones, Williston.

Five papers have been read, and six meetings have been held. At these meetings nine clinical cases have been presented. At this time there are twelve members, all in good standing. During the year the society has acquired two new members, and has lost by death one member, Dr. H. C. Windel, of Williston. The last two meetings of this society have been well attended, good papers have been read, and we look forward to having a good year.

This was the first society in North Dakota to report a 100 per cent paid-up membership of all the doctors in the district for 1926.

The Northwestern District Society has 54 members in good standing and two members not in good standing. Two members left the state during the past year. One member was transferred to the Kotana Society. Eight new members have been admitted. One death occurred during the past year. Six meetings have been held during the year, all well attended. During the year our fee bill was revised.

In July we held a joint meeting with the Devils Lake Society at Dunseith. This meeting was arranged and carried through by Dr. Lamont and was largely devoted to chest conditions. Every man attending reported a very interesting and instructive program and a mighty fine time. Following the meeting at Dunseith a number of the men crossed the international boundary and attended a similar meeting at Ninette, Manitoba, conducted by Dr. Stewart and his staff. Those making the trip were amply repaid.

FIFTH DISTRICT

SHEYENNE VALLEY AND TRAILL-STEELE SOCIETIES

Dr. F. L. Wicks, Valley City, Councilor

At last year's meeting the Traill-Steele County and the Sheyenne Valley Societies were combined as the Fifth District.

I am indebted to Dr. Syver Vinje, Secretary of the Traill-Steele County Society, for the information reported. It was his pleasure to report for this society last year.

This society is one of the small ones of the state, but the membership percentage, the attendance at meetings held, and the spirit of harmony and fraternity are of a high order.

There are eleven men on the roster with two men in the territory who do not hold membership. One of these has signified a willingness to join by transfer. Three meetings have been held during

the current year with an average attendance of nine and one-third members per meeting, certainly a mark for our larger societies to aim at. These meetings have also been attended by visiting doctors to the number of nine.

Papers have been presented by two outside men also, Dr. Hocking, a dentist of Devils Lake, and Dr. Banks of the University.

The following are the present officers: President, Dr. O. A. Knutson, Buxton; Vice-President, Dr. W. H. Cuthbert, Hillsboro; Secretary-Treasurer, Dr. Syver Vinje, Hillsboro; Censors, Dr. C. A. Hjelle, Portland, Dr. R. C. Little, Mayville, and Dr. O. A. Knutson; Delegate, Dr. T. J. Glasscock, Finley.

In the Shyenney Valley Medical Society our membership stands at eighteen, the same as last year—the available material of our territory.

Our annual meeting was held on January 20. A banquet was served, at which the officers of the previous year were re-elected.

No meeting has been held since the receipt of a recent communication from the president of the State Association relative to representation of that body at sessions of the legislature, but by personal interview our secretary finds that such representation would meet with the approval of the men of our society.

Our community has on hand at present a drive for funds necessary for our share toward the erection of a modern hospital by the Sisters of Mercy and our men have met several times to consider, plan, and adopt methods of helpfulness in support of this important project. We have high hopes of obtaining the required amount.

A fine spirit of fraternity prevails in our district.

SECOND DISTRICT

DEVILS LAKE DISTRICT SOCIETY

Dr. G. F. Drew, Devils Lake, Councilor

The Devils Lake District Medical Society during 1925 had about a normal year in point of attendance and interest. We had four meetings as usual, as well or better attended than the average attendance has been in the past. Our July meeting was exceptional, as we met with the Northwestern District Medical Society at San Haven. This proved a very interesting meeting, eight of our members being in attendance. Dr. Lamont, Superintendent, furnished an excellent program and his efforts were much appreciated. He received favorable comments from both societies. A number of clinical cases were presented by Dr. Lamont, followed by lantern slides on "Physical Diagnosis" and a film on "Pulmonary Tuberculosis." An especially fine luncheon was served after which toasts were indulged in by Dr. A. J. McCannel and Dr. James Grassick, and also by the secretaries of the Northwestern District Medical Society and the Devils Lake Medical Society. A large delegation from this meeting attended a very interesting meeting at Ninette, Manitoba Sanitarium. Dr. Stewart, the superintendent, made it very interesting for all.

There has been no friction among our members. We have lost one member by removal from the district and another member has left the state, but still retains his membership. The membership now is 27.

NINTH DISTRICT

TRI-COUNTY MEDICAL SOCIETY

Dr. Charles MacLachlan, New Rockford, Councilor

This Society has held seven meetings since reporting at last year's annual meeting in Fargo. These meetings with their dates were as follows: July 19 at Fessenden; September 24 at Harvey; November 5 and December 7, all in 1925, at New Rockford; February at New Rockford; April 1 at Fessenden; May 20 at Carrington, all in 1926. The attendance at these meetings has averaged about 65 per cent of the total membership.

The interesting feature of the meetings has been the free discussion of clinical cases that have come under the care of its members. The date of the meeting is left to the choice of an efficient secretary. The hour of opening is usually 4 p. m. Business matters are dealt with promptly. The utmost of good fraternal feeling prevails.

The membership is now 21, an increase of 2 over last year's report. The Society, however, records with regret the loss (by removal to California), through illness and advancing years, of one of its most respected members, Dr. J. A. Rankin, not only a past-president of the local Society, but a past-president and for many years the valued treasurer of the State Association. Our Society feelingly elected him to honorary membership upon his retirement from professional activity.

For some time in our Society meetings, the local representatives have constituted themselves hosts to the visitors, and a sumptuous repast is partaken of at the close of each meeting, thus enhancing the social features. The Society was delighted to entertain Secretary McCannel at its last meeting and was glad to listen to the recital and have a part in the discussion of two unusually interesting case reports from his records.

Your Councilor regrets being unable to personally call upon each member of the Society during the year—a custom adopted in our Society some years ago.

The Tri-County Society gave an advance order for a copy for each of its members of Dr. Grassick's "History of North Dakota Medicine." Has this record been equalled by any sister society?

Our President is Dr. C. R. Tompkins, Oberon, and our Secretary is Dr. H. Vande Erve, Carrington.

EIGHTH DISTRICT

SOUTHERN DISTRICT AND RICHLAND COUNTY SOCIETIES

Dr. L. B. Green, Edgeley, Councilor

The Southern District consists of a number of small towns widely scattered. It has been hard to keep up interest. We had three meetings last year, but these were very lightly attended. Our membership has increased to slightly over 25.

SEVENTH DISTRICT

STUTSMAN COUNTY SOCIETY

Dr. P. G. Artz, Jamestown, Councilor

We have had fairly good meetings, but the attendance has not been as good as it might be. We have had three new members during the year. This means that every man except one in the county

is a member and there is a question whether or not this man is licensed. We are getting along very nicely.

THE CHAIR: The next order of business will be the report of the standing committees.

REPORTS OF COMMITTEES

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. V. J. LaRose, Bismarck, Chairman

Up to the present time the Committee on public Policy and Legislation has functioned, as a rule, only during the year of a legislative session, a report of its activities being made at the annual meeting of our State Medical Association held during that year.

As this is an inter-legislative year, we have no report of legislation affecting the medical profession, fought for or opposed; however, I wish to present a few impressions gathered during my term of membership on this Committee and to offer a few suggestions which I believe should receive the consideration of the House of Delegates.

Medical legislation, to the average legislator and layman, is a good deal like the old-fashioned sulphur and molasses of by-gone days: it is annually forced upon him with the statement that it is good for what ails him. If he swallows it at all it is usually with a grimace of marked distaste.

Experience has shown that it is difficult to convince the majority of the public, or those representing the public in legislative session, that laws safeguarding public health, which advocate prevention and eradication of disease, are really for the good of the public and are not for the benefit of the medical profession.

From my experience on the Legislative Committee, I am convinced that it is a mistake for doctors to introduce medical bills or even to oppose them. Possibly, we have in the past been too active in trying to pass laws for the protection of the public. Not only have our motives been misunderstood, but because of our continued activities the people have lost all sense of their own responsibility in these matters. They expect us to inaugurate and enforce sanitary and quarantine regulations, and then they criticise us when we try to prevent the spread of contagious diseases. Our efforts should be directed more to the education of the public. Dr. Wendell C. Phillips, of New York, in his inaugural address as president of the American Medical Association, made an earnest plea for more publicity for medical science. Several state associations have gone into this matter thoroughly within the past few years, and they report amazing success. The public to-day seems anxious to learn about the symptoms and signs of the onset of disease.

The editors of great daily newspapers and magazines, the newspaper syndicates, the university and public school teachers are calling on the medical profession as never before to enter this field. They properly contend that the educated physician must remain the source of personal and public-health education.

With the education of the public, the knowledge that medical legislation is for their protection, and is not graft of physicians, the public would soon demand legislation for their own protection, and as

constituents of the legislative representatives they would get it far easier than the doctors could get it for them.

I have found with few exceptions that the average legislator is fair and open-minded once he is disarmed of suspicion; and if there were some way of gaining his confidence so that he would listen to the other side of the argument when presented by the paid lobbyists of the different cults, much of his opposition to medical legislation might be eliminated.

I feel that a great deal could be accomplished if we doctors would make it a point to cultivate acquaintanceship with representatives from our districts, not during the session, but throughout the year, lead them to feel that they can get an honest and unbiased opinion on medical questions by appealing to their home doctors as friends; then, a confidential letter from the doctor to the representative from his district will have some weight.

Every session of the legislature brings forth a crop of all kinds of bills directly or indirectly concerning our profession. The chiropractors, osteopaths, and other "paths" and cults are always on hand with their quota. They supply ample funds to keep clever lobbyists on hand during the entire session to look after and further their interests, while we, with the exception of one session, have depended on one or two medical members of the legislature and S. O. S. calls to the Bismarck doctors to present our arguments against pernicious legislation. Upon many occasions the first inkling your legislative committee would have of some important bill affecting our profession would be through the daily paper or through a telephone call from some friendly member advising us to appear before some committee. These calls invariably come when one is busiest and usually give us only a few hours notice to prepare ourselves to present plausible arguments before committees or groups of legislators. We have no time to inform ourselves sufficiently to meet the cleverly prepared arguments of the lobbyists. We are compelled to appear before committees with hazy statistics, and at times we make a sorry impression.

I do not wish to imply that we have no friends in the legislature, for we have. They are usually in the minority, but they have come to the rescue of the legislative committee on many occasions, and through their efforts much pernicious legislation has been headed off and much legislation sponsored by the medical profession has been brought to the attention of the legislative session in such a diplomatic way as to overcome blind or obstinate opposition.

As I stated before, perhaps we have attempted in the past to force too much medical legislation upon the public. I have always felt that the promiscuous introduction of medical bills by doctors should be under the control and censorship of the State Association. Legislation is sometimes introduced which might benefit some particular locality and still be detrimental to the state at large. Bills are sometimes introduced by disgruntled individuals, merely as spite work, asking for legislation which would do them no good but would cause inconvenience to individuals or groups who had incurred their displeasure. Then, again, legislative bills hurriedly prepared just before or during the session are sent into the Legislative Committee with

the request that they recommend and do everything possible to secure their passage. This places too much responsibility upon the members of the Legislative Committee. Our burden would be considerably lightened if all proposed legislation were first submitted to the Council and House of Delegates at each annual meeting for approval or disapproval, then read to the Association as a whole with the recommendations of Council and Delegates, to be voted upon by all members if necessary. Medical legislation sponsored by the entire State Medical Association might attract more favorable attention from the members of the state legislatures.

Perhaps one of the greatest difficulties with which the Legislative Committee has to contend is to keep track of bills introduced in which legislation detrimental to the medical profession is hidden under some other caption. We have no means of learning about the objectionable features of these bills until at times it is too late to oppose them successfully. The State Association should arrange to keep a full-time man at the capitol throughout the entire session. Minnesota did this last year with the result that much pernicious legislation was headed off, and laws on the statute books objectionable to the medical profession were abolished or modified. This man should not necessarily be a medical man. In fact, I am convinced that it is a mistake for doctors to argue for or against medical bills. A layman who has the faculty of proper approach and is a good mixer, can accomplish far more.

The cults have their paid representative at every session, and I believe we are perfectly justified in fighting the devil with fire. I would recommend that the State Association appropriate a sum of not more than \$500.00 to be used by the Legislative Committee as they see fit. I am sure it will prove to be an excellent investment in securing legislation which will be of untold benefit to the medical profession and to the public.

DR. G. M. WILLIAMSON, Grand Forks: I would suggest bringing up to-morrow the suggestions set forth in this report.

DR. E. A. PRAY, Valley City: This question of a paid representative at the sessions of the legislature has been up before the American Medical Association. At the Atlantic City meeting Dr. Work gave a short talk opposing such a movement. I do not agree with him. My own experience is that that is the way to get by. The idea is that the representative to the legislature is to give information to the members concerning the bills the medical profession is interested in. I am heartily in favor of doing something along this line.

DR. CHARLES MACLACHLAN, New Rockford: I think we should have such a man there, but he should not be a doctor.

DR. KENT E. DARROW, Fargo: I move that the Association appropriate \$500.00 to Dr. LaRose's Committee on Public Policy and Legisla-

tion, the money to be used at the discretion of the Committee. Motion seconded.

DR. C. E. STACKHOUSE, Bismarck: I think we are all agreed that we should have a man at Bismarck during the sessions of the legislature, but I do not think \$500.00 is sufficient.

DR. V. J. LAROSE, Bismarck: I thought we might try that. We have been going along on nothing.

DR. JAMES GRASSICK, Grand Forks: Would not this matter have to go through the Council?

DR. DARROW: I will amend my motion to read, that it be recommended to the Council.

DR. F. R. SMYTH, Bismarck: I was prepared to vote against Dr. Darrow's original motion. I think we are going a little too fast. At the last Grand Forks meeting we passed a resolution that no resolution submitted was to be considered as having the approval of organized medicine without being first submitted to the Committee on Public Policy and Legislation.

DR. L. B. GREENE, Edgeley: We have listened to the report of the Treasurer. I would like to know what we are laying up this reserve for. We have something like \$4,000 on hand. Why do we not use that to protect ourselves from paid legislation? It does not seem fair to appoint a committee and send them out without any ammunition. I would like to amend Dr. Darrow's motion that it be referred to the Council to appropriate what they consider an adequate sum to be turned over to the Legislative Committee to be used at their discretion.

DR. H. A. BRANDES, Bismarck: Concerning the meeting that was held at Bismarck during the last legislature, I do not believe it would have helped any doctor to get up and talk to those members of the legislature at that time.

THE CHAIR: I attended the meeting at Dallas and heard Dr. Phillips deliver his inaugural address in which he spoke of the necessity for educating the people.

DR. KENT E. DARROW, Fargo: I would like to withdraw my motion with the consent of my second. The second consented.

DR. L. B. GREENE, Edgeley: I will withdraw my motion.

DR. KENT E. DARROW, Fargo: I move that the House of Delegates recommend to the Council that a sum of money be appropriated to the Committee on Public Policy and Legislation, the amount to be left to the discretion of the Council. Motion seconded.

DR. E. A. PRAY, Valley City: Would that

wording of it suit you as well as to have a definite sum named?

DR. V. J. LAROSE, Bismarck: Yes.

DR. F. R. SMYTH, Bismarck: I would like to ask for a little information. The legislative and other committees have great expense at times and have presented bills to the Association occasionally. Has payment been refused at any time?

DR. KENT E. DARROW, Fargo: I could not say.

The motion made by Dr. Darrow was carried.

On motion of Dr. Charles MacLachlan, the report of the Committee on Public Policy and Legislation was accepted.

REPORT OF THE COMMITTEE ON MEDICAL HISTORY OF THE STATE

Dr. G. M. Williamson, Grand Forks, Chairman

Your Committee on Medical History has completed its work and the finished copy which is in the hands of the subscribers tells how well that part, as to the putting of the manuscript in book form, has been done.

The profession in North Dakota occupy the enviable position among the states of the Union of having its early history in permanent record form, and owe a lasting debt of gratitude to the Author, Dr. James Grassick, for making this possible.

Your Committee, owing to its inexperience in having books published, estimated the cost of putting a copy in the hands of a subscriber far too small. We started out on the assumption that almost every man practicing medicine in North Dakota would be anxious to have a copy. In this we were mistaken. There are about 500 licensed physicians in the state, 370 of whom were reported as belonging to our Association. Only 263 Doctors in North Dakota have ordered books.

To date 300 copies have been sold. We have not received payment for all, although several requests for remittances have been made.

A contract with the Page Printing Co., of Grand Forks for 500 copies at the following cost:

340 pages, Library binding.....	\$1,299.40	
37 Half-tone plates cost an added	205.35	
Total	\$1,504.75	
There were 76 additional pages costing \$3.80 a page	\$288.80	
And the type of binding was changed at an additional cost of 10c per copy	50.00	
Total	\$1,843.55	
Postage	37.32	
Total	\$1,880.87	\$1,880.87
To date there has been collected.....	\$ 932.00	
Paid to Page Ptg. Co.....	\$ 800.00	
Postage	37.32	
Refund to Dr. LaRose.....	17.50	
Total	\$ 854.82	

Balance in Bank May 22nd.....\$ 77.68

There are 42 books to be paid for at \$3.50 147.00 |

Total

Total cost of publishing history

There has been paid on this account

Balance

There are 200 books on hand at \$3.50

42 books unpaid for at \$3.50.....

Cash in Northern State Bank.....

Total

Loss on publishing

As stated in beginning of this report your committee estimated the cost of putting this book on the market too low. As is shown the actual cost of putting this book in the subscribers hands to date is \$3.76.

We are of the opinion that the balance of the books on hand can be disposed of in time, but the publishers should not be made to wait until that occurs before being paid. This is the problem the House of Delegates have to solve as to the best means of handling this balance.

Respectfully submitted,

H. G. WAUTAT, M.D.

GEO. M. WILLIAMSON, M.D.

Committee on Publication.

May 24, 1926

DR. V. J. LAROSE, Bismarck: I would suggest that the bill to the printing company be paid, and, as the books are disposed of, to deposit the money back into the fund.

DR. CHARLES MACLACHLAN, New Rockford: I move that the report be accepted and referred to the Council with the recommendation made by Dr. LaRose. Motion seconded and carried.

DR. V. J. LAROSE, Bismarck: I think we should extend a vote of thanks and appreciation to Dr. Grassick for the wonderful work he has done in getting up this history and also to the Committee for the work they have done in getting the book before the public.

COMMITTEE ON MEDICAL DEFENSE

DR. E. A. PRAY, Valley City: There is just one thing that comes up in connection with the Medical Defense Committee and that is that the insurance company has notified us that the rates in the different sections of the state will be increased. They state that the eastern counties are all right as far as the defense proposition is concerned, but for the central counties they will require \$80.00 a year and for the western counties not less than \$150.00.

THE SECRETARY: I think a motion to reject their proposition would be in order. The Fort

Wayne Company will insure us for less.

DR. PRAY: The Fort Wayne Company has no representative in the state, and we could not get service on them.

THE CHAIR: You can think this over until tomorrow.

COMMITTEE TO AUDIT THE TREASURER'S REPORT

DR. F. R. SMYTH, Bismarck: I would like to appoint Drs. E. A. Pray and L. B. Greene as a committee to audit the Treasurer's report.

On motion the House adjourned at 12:30 A. M. to meet again on Tuesday.

SECOND SESSION—TUESDAY, MAY 25, 1926

The second session of the House of Delegates was called to order at 12:20 P. M. by the First Vice-President.

THE CHAIR: The first order of business will be a report from the Committee on Medical Defense.

REPORT OF THE COMMITTEE ON MEDICAL DEFENSE

Dr. E. A. Pray, Valley City, Chairman

I have here a letter from Robert H. Bosard, relative to the case of Mabel Neil vs. Z. P. King, reading as follows:

"This matter came up for trial in January, 1926, and Dr. King not wishing to come here to Minot for the trial and bring his witnesses, I negotiated a settlement of the case for him for \$175.00, which he paid. I submitted my bill to the Association for the final charges in the matter on the first of February, and the same was paid, which closes all of the litigation now pending against doctors who are entitled to defense by the Association.

"There are undismissed three cases, as shown by my report of September 4, 1924: Anderson vs. Arneson in Nelson County; Whittey vs. H. L. Halvorson, of Des Lacs, and J. E. Reed vs. W. D. Wager, of Petersburg in Nelson County. The last two cases have never been put on the calendar. We believe that none of these cases will ever be tried or that you will ever be called upon to defend the same.

"I entered into a contract with the Committee on Medical Defense of your Association on November 21, 1911, and take this opportunity of thanking your Association for the business which I have had, and of advising you that my relations with the Association, with the Committee on Medical Defense and with the doctors throughout the state with whom I have been in touch during the period of this work have been very pleasant. I have always found the doctors and the committees willing at all times to render all service possible and for the best interests of the Association, and they have given me advice and counsel in matters freely and voluntarily for the best interest of the medical profession."

By consent of the officials I have invited two representatives of the Ætna Company to this meet-

ing to have them present the matter of continuing the insurance—Mr. Stevenson and Mr. Stern. I will ask Mr. Stevenson to present the thing as it stands with the Company.

MR. STEVENSON: The Company wrote us in April stating that the experience in North Dakota had been such that it would be necessary to either increase the rate or discontinue the service. For instance, in one section with a total membership of 180, three claims have arisen under the group policy, and it is estimated that it will cost \$900.00 to settle. In the central section with a membership of 62, four claims have arisen, and the amount of settlement is estimated at \$8,000.00. In the western portion of the state with a total membership of 136, there were 11 claims totaling \$20,922, making a grand total of 372 members in the Association last year, 18 claims, and a total of \$29,218. The plan proposed is to have the eastern portion continue to pay \$25.00, increase the central portion to \$85.00 and the western portion to \$150.00, these figures to continue as long as the present number of claims continue. If the claims decrease, there will be a corresponding decrease in the rate.

THE CHAIR: This is a rather amazing situation. I would like to ask if that is somewhat uniform throughout the western part of the state or is that a condition that is restricted to any particular locality? You may have some suggestions as to why this condition exists.

MR. STEVENSON: I can give you figures in each one of the societies.

THE SECRETARY: The Ætna Company went out prior to our last meeting and insured everybody regardless of whether he was a member of the Association or licensed in the state.

MR. STEVENSON: I would not say they included men who were not licensed.

THE SECRETARY: That was the point I wanted to raise. During this year I have given the Ætna credit in my report for co-operating with this Association, but those of you who were present at our meeting last year know they wrote everyone who was practicing medicine and included them in the group policy.

MR. STERN: Are you able to mention any specific cases?

THE SECRETARY: Yes, but I would have to take time to look them up.

MR. STERN: I know there was one case you had written about. There was some misunderstanding about this particular case. I know the policy of the company is not to write any doctor unless he is a member of the Association. That is an absolute rule that is followed without any question.

THE SECRETARY: I have a letter from the agent of the Ætna Company concerning a doctor in the Ramstad Clinic in Bismarck whom

they wish to include in the group policy although he is not a member of the Association, but expects to make application for membership at the next meeting.

THE CHAIR: I am not sufficiently familiar with this situation, but is it not the case that there are a number of men who are licensed, but who are not members of the State Association?

MR. STEVENSON: It is not the intention of the Ætna to include men who are not members of the Association.

DR. N. O. RAMSTAD, Bismarck: I would like to ask if any money had been paid by the Ætna to any men in the Sixth District.

MR. STEVENSON: In the case of Dr. Lipp the cost was \$1,500. The rest of the figures read are estimates of the cases that are now pending.

DR. RAMSTAD: That case was settled out of court. Why do you not fight these cases rather than settle?

MR. STERN: It is our policy not to make a settlement because we realize that settlements encourage other cases. Our policy is to fight. There are some cases, however, in which it seems advisable to make settlement because of the desire of the policy holder himself. Our policy is that no settlement shall be made without the written consent of the policy holder. We are willing to permit and want the Medical Defense Committee to absolutely tell us what to do. We want them to review each and every case with us. At the present time we have about 18 malpractice suits in North Dakota varying in importance, three or four of them very serious cases.

It was moved that this matter be turned over the Medical Defense Committee for consideration. Motion seconded and carried.

REPORT OF THE COMMITTEE ON TUBERCULOSIS

Dr. J. G. LaMont, Dunseith, Chairman

The Committee on Tuberculosis for 1926 begs leave to report as follows:

The North Dakota Tuberculosis Association, since the establishment of the State Health Department, is no longer granted a legislative appropriation. The Seal sale has been sufficient, not only to continue the nursing services and clinic program undertaken in former years, but also to extend in a limited way all of these activities. The Traveling Clinic has been co-operating with the medical profession and State Board of Health in locating and properly controlling malnutrition cases, as well as the earlier and the more advanced types of tuberculosis. In the fall of 1925 the Clinic operated chiefly in the

Slope counties where nursing and medical services are scant and distant. A large number of examinations were made, and parents were informed of defects to be corrected. The Clinic is usually in the field from five to six months, providing both a doctor and a nurse for inspection and examination work. The total of five years clinic work gives the following results:

Number of people examined.....	17,278
Number of clinics.....	319
Tuberculosis cases examined.....	566
Miles traveled	23,587
Miles traveled in 1925.....	6,680
Examinations in 1925.....	4,103

During the rest of the year a nurse spends her time in school-inspection work. The localities recently visited were Divide, Dickey, and Ramsey Counties, and the city of Devils Lake. Last year's nursing service from October to May gives the following totals:

Schools visited	268
Children inspected	7,225

It is an interesting fact that the number of children found to be from seven to twenty-five pounds underweight was 3,039.

The office of the Tuberculosis Association at Bismarck has made a strenuous campaign in the direction of locating active cases of tuberculosis through the state.

A report is made of cases discharged from the Sanatorium, and so far as possible a record kept for each county. Only a portion of this information is available through the office of the State Health Board. A good deal of literature is furnished by the State Association to Counties, giving necessary information to patients as to the conduct of home treatment and furnishing detailed explanation of malnutrition symptoms and evidence of active disease.

A State Lecturer spoke during the year at various points in the state, including Crary, Penn, Churches Ferry, Minot, Jamestown, Fargo, and Grand Forks. A Health Exhibit is also made at the various fairs.

Acknowledgement is made to the Northern Pacific, Great Northern, and Soo Railways for passes to tuberculosis workers for the year 1926. An effort has been made by the Secretary of the Association during the past year to systematize the work of the office at Bismarck, rendering it more responsive to public needs, and to centralize control of the various activities of the field workers making them responsible to the Executive Board.

The Pennant, the official organ of the State Tuberculosis Association, is an attractive health magazine, of which Dr. James Grassick is editor. This is financed by the State Tuberculosis Association, about 4,000 copies being issued per month. It contains health articles and news of the various activities of the State Association.

The State Sanatorium has been filled to capacity practically throughout the entire year, and there is constantly a very considerable waiting list. It is to be deplored that tuberculous cases are not more promptly put under hospital management and supervision during the incipient and moderately advanced stages. A very large number of cases are being sent, especially from the country districts, in a hopeless condition. If tuberculosis is preventable

and curable in the earlier stages there should be fewer advanced cases. To be fair, the blame rests most frequently upon the patient himself. Medical advice is not obtained in the earlier stages, and much time is often frittered away with chiropractors and other cultists who are only too glad to shift the responsibility when the patient reaches the hopeless stage. It would seem that each county should have an active health center, recognizing and properly controlling all active cases of tuberculosis, as a part of the regular community health program, and that some authoritative plan should be made operative with the object of preventing the advanced stage of tuberculosis, both for individual and public welfare.

An active campaign should be made during the coming winter for increased room at the Sanatorium. It is regretted that the Children's Building could not be completed during the season of 1926, it being deemed advisable by the Board of Administration to hold this over for an increase of appropriation in building up to an evidently higher standard of State requirement. If advanced cases are to be housed adequately, another unit to the Infirmary of a capacity of sixty to seventy-five patients would not be too much. There should be also sufficient room provided to house the necessary increase of employees. Sanatorium building has not progressed sufficiently since the World War for the sake of a so-called economy program, and it would seem an opportune time now to urge further building. To this end and to the general advancement of tuberculosis work, the continued co-operation of the medical profession in our state is urgently solicited.

It was moved that the report be adopted. Motion seconded and carried.

DR. N. O. RAMSTAD, Bismarck: Would it not be advisable in view of the work that is being done in this state on tuberculosis that the Association petition the legislature for more appropriation?

I would like to move that this Association petition the legislature for an increased appropriation in favor of the tuberculosis work in this state. Motion seconded and carried.

THE CHAIR: This will be referred to the Committee on Public Policy.

The next order of business will be the report of the Committee on Necrology.

REPORT OF COMMITTEE ON NECROLOGY

Dr. F. R. Smyth, Bismarck, Chairman

Frederick William Maercklein, Oakes, N. D., born December 24, 1875 at Waubesa, Wisconsin; graduated from the Milwaukee Medical College 1897; licensed 1898; practiced in Oakes, N. D., since 1906; died August 27, 1925, of cerebral hemorrhage and cardiac disease. Member of the North Dakota State Medical Association and Fellow of the American Medical Association. Dr. Maercklein was one of five physicians of the same name, all relatives, practicing in North Dakota. He was well known as a skillful practitioner and a good citizen, inter-

ested in all movements for the good of the community.

Cyrus Kidd Ritchie, Velva, N. D., born September 8, 1858; graduated from Barnes Medical College, St. Louis, 1903; licensed 1904; died September 29, 1925, of cardiac valvular disease. Member of the State Medical Association and of the A. M. A. He established himself in practice in Velva in 1904 and continued there until his death. He had a wide country field and was highly esteemed by his professional brethren and the people of his community.

Robert Mercer Evans, Minto, N. D., born August 26, 1839; graduated from Ontario College of Physicians and Surgeons in 1869; licensed in 1885; died in January, 1926. Member of the North Dakota State Medical Association and of the A. M. A. Dr. Evans, the Nestor of North Dakota physicians, had attained an age reached by few, but did not retire from practice. A few years ago he gave a most interesting talk at the State Association meeting of experiences in medical practice in territorial days. At that time he had recently attended in childbirth a mother at whose birth and that of her mother he had also officiated.

Charles G. Forbes, Washburn, N. D., born 1864; graduated from Michigan University in 1886; licensed in 1888; died in April, 1926, of heart disease and pneumonia. He was also a druggist. He was not a member of the State Association at the time of his death. Dr. Forbes was one of the medical pioneers, starting practice in the Territory of Dakota. As long as he was in actual practice he was a member of the local, state, and A. M. A. Society. During the war he was a diligent member of the Sixth District Medical Committee of Defense and rendered valuable assistance in preparing records of physicians available for service.

Henry C. Windel, Williston, born in 1870; graduated from Queen's University, Faculty of Medicine, Kingston; licensed 1902; died April 1926 from appendicitis. Member of North Dakota State Medical Association and of the A. M. A. Dr. Windel located in Williston soon after graduation and made a record for himself as a conscientious and skillful practitioner. He was much interested in public health work and at the time of his death was county health officer of Williams County.

It was moved that the report be accepted. Motion seconded and carried.

TREASURER'S REPORT AUDITED AND APPROVED

DR. F. R. SMYTH, Bismarck: The Treasurer's report has been audited and approved by the Committee.

DR. PAUL H. BURTON, Fargo: I move that the report be received. Motion seconded and carried.

ELECTION OF HONORARY MEMBERS

DR. CHARLES MACLACHLAN, New Rockford: I want to make a motion that Drs. H. M. Wheeler, Grand Forks, and J. A. Rankin, Jamestown, both past presidents and only recently retired from active practice, be made honorary

members of this Association. Motion seconded and carried.

THE CHAIR: We will now have the report of the Nominating Committee.

DR. PAUL H. BURTON, Fargo: The report of the Nominating Committee should not come until the last day.

DR. G. M. WILLIAMSON, Grand Forks: If there is no more business to come before the House, I move that the rules be suspended and the report of the Nominating Committee be presented. Motion seconded and carried.

REPORT OF THE NOMINATING COMMITTEE

Dr. W. C. Fawcett, Starkweather, Chairman
 President—N. O. Ramstad, Bismarck.
 President-Elect—Thomas Mulligan, Grand Forks.
 First Vice-President—W. F. Sihler, Devils Lake.
 Second Vice-Pres.—John Crawford, New Rockford.
 Secretary—Alex J. McCannel, Minot.
 Treasurer—W. W. Wood, Jamestown.
 Delegate to A. M. A.—E. A. Pray, Valley City.
 Alternate—A. Carr, Sr., Minot.
 Examining Board—H. M. Waldren, Drayton,
 H. H. Healy, Grand Forks,
 M. MacGregor, Murdock.

On motion, duly seconded, the above nominations were approved, and the officers duly elected.

MEETING PLACE FOR 1927

THE CHAIR: The next order of business is the selection of a meeting place for 1927.

THE SECRETARY: I have some communications from different organizations in Grand Forks inviting the Society to go there next year.

DR. PAUL H. BURTON, Fargo: I move that we go to Grand Forks next year. Motion seconded and carried.

ELECTION OF COUNCILORS

THE CHAIR: The next order of business is the election of Councilors.

The following Councilors were nominated and duly elected:

First District.....Paul H. Burton, Fargo.
 Third District.....G. M. Williams, Grand Forks.
 Sixth District.....F. R. Smyth, Bismarck.

ELECTION OF MEMBERS OF COMMITTEES ON MEDICAL DEFENSE AND MEDICAL EDUCATION

THE CHAIR: We have two committees to be elected by the House. On the Medical Defense Committee Drs. C. N. Callander and F. W. Ferguson are the ones whose term expires this year. On the Committee on Medical Education Dr. H. H. Healy's term expires.

DR. W. C. FAWCETT, Starkweather: I move that Drs. Callander and Ferguson be re-elected as members of the Committee on Medical Defense. Motion seconded and carried.

I also move that Dr. H. H. Healy be re-elected a member of the Committee on Medical Education. Motion seconded and carried.

RESOLUTION BY COMMITTEE ON PUBLIC HEALTH

DR. F. R. SMYTH, Bismarck: The Public Health Committee wished to present the following resolution:

Believing that successful public health work requires prompt, accurate and reliable vital statistics, we recommend that the State Public Health Department resume the publication of the monthly State Health Bulletin which for more than twenty years has been a guide to health officers and others.

I move the adoption of this resolution and that a copy be sent to the chairman of the State Advisory Council and the State Health Department. Motion seconded and carried.

MEMBERSHIP FEE

THE SECRETARY: I would like to ask the advice of the House of Delegates on this one thing: We have members coming in all the time from the 1st of January to the 31st of December. What are we going to do about the membership fee for those coming in the last half of the year? Are we going to charge \$5.00 or apportion the amount? I think we should have a five dollar membership to cover the entire year, no matter what time a member comes in.

DR. KENT E. DARROW, Fargo: I move that we fix our annual dues at \$5.00, no matter what time a member comes in. Motion seconded and carried.

REPORT OF THE DELEGATE TO THE A. M. A., 1925

DR. E. A. PRAY, Valley City: I have to report as Delegate to the 1925 meeting of the American Medical Association:

As your Delegate to the 76th Annual Session of the American Medical Association, held at Atlantic City, N. J., May 25-29, 1925, I wish to give you a résumé of the important work and my impressions of the organization. These ideas are those of one of the lesser lights, it being certain that the representative from a one-man state cannot attain to great heights with this great body unless he should be one of those brilliant leaders and through oratory gain prestige.

It is true that a Delegate must have long service to his credit to be of any real value. Some of the larger State Associations return certain men con-

tinuously and thus in addition to the number of delegates have greater influence than could otherwise occur. President Pusey advised that Delegates be elected in a previous year, thus giving new men an opportunity to familiarize themselves with business routine in advance of the meeting to which they are regularly accredited. One official stated that it was a standing joke that when Black of New York was asked about a certain Delegate, he would reply, "He's all right; he is a classmate of mine." It has been somewhat fortunate for me that I am one of Dr. Black's classmates.

Dr. Hubert Work, Secretary of the Interior, was in attendance upon the House of Delegates for one session. It seemed good to see him again. He was a delegate for eighteen years and presided for four years and finally became president and was a most excellent officer.

There has been a move on foot to retain a representative at the National Capitol who would mainly function as a bureau of information for the National law-making body. Dr. Work advised against this, as being unwise to even put ourselves in a position of seeming to wish to influence legislation. Personally I am sure he is wrong. Many things get by as laws and regulations because of real ignorance of conditions. I am heartily in favor of this representative of our profession in Washington.

President Pusey very strongly favors a reduction in preliminary educational courses. At the present rate of gain in numbers of medical graduates it will not be many years before we shall be again well stocked, and every cross roads will have its Doctor of Medicine. Therefore I do not agree. There is little use of putting ourselves on a chiropractic educational plane; it is far better to attain to the dignity of a well-educated, well-rounded medical man.

I am not entirely in accord with big corporation ideas, such as the American Medical Association. Paternalism is rampant. The nation, state, and municipality are rapidly approaching a state bordering on a law requiring that your nails shall be manicured at 7:30 A. M. on Tuesday. Laws are being enacted that are foolish and are made more for the sake of doing something to make an impression on the constituency that placed the legislator in office. I can see that the American Medical Association is doing just this—many weak spots are strengthened, but the danger is great that many unnecessary rulings will be made to be only a burden on the individual.

The excessive restrictions of the Volstead act are and have been obnoxious to perhaps a majority of the people.

The Harrison law pertaining to narcotics is certainly obnoxious to every doctor. Regularly a semblance of authority comes to your office with a bunch of different regulations every time he comes, and seldom do you see one with courtesy, but mostly with a bulldog growl. One came to see me recently and said I would be penalized for not putting my initials to the prescriptions. I asked to be shown the law and the reading was "The signature *may* be written as checks are signed," not *must* but *may*! I am not a legal interpreter enough to know, but it did not look like a penalizing proposition.

And then there is that dog tax tied onto us to give jobs to a large number of indifferent aspirants,

at a salary that is very small but attractive to them because of lack of ability to make themselves an asset in the business world.

A resolution to have interim meetings of the House of Delegates was not thought practical, to which I subscribed.

The Committee on Scientific Research granted \$2,000 in small amounts to aid scientific investigation of worthy possibilities, a laudable investment.

The committee on lye legislation and on cosmetics, and hair dyes, is evidence of unnecessary interference by a body which should do more serious work.

The motion theater is a great and valuable adjunct to the American Medical Association meetings, being continuously in operation during scientific sessions.

Graduate extension work will soon materialize, and each vicinity will be enabled to promote advanced work and review work that will benefit each doctor who cares to take advantage of the benefits offered. The present plan is to have a corps of instructors to be sent out to localities that apply. I am in favor.

The Association has vast literary resources and is able to suggest details and furnish pamphlets in defense or for the promotion of any subject that promises to be a benefit to science.

The American Medical Association is sound, but needs an increasing income to handle the valuable material that comes before them. The selection of meeting places is a serious matter. Atlantic City is ideal in that 6,000 men do not make a dent in the entertainment facilities. Very few localities can do so well.

I wish to thank you for conferring on me this honor as delegate.

REPORT OF THE DELEGATE TO THE

A. M. A., 1926

Dr. J. W. Bowen, Dickinson, made his report as Delegate to the meeting of the A. M. A. at Dallas, Texas, as follows:

The meeting of the A. M. A. at Dallas, Texas, was in every detail a successful one. To imagine a city of 265,000 could take care of over 6,000 visitors with ease and decorum was a revelation. It seemed as though everybody in the city was imbued with the idea of making the meeting a success and they did.

The official opening was on Tuesday evening at the First Baptist Church, when the retiring President, Dr. W. D. Haggard, of Nashville, Tennessee, introduced the incoming President, Dr. Wendell Phillips, of New York.

Dr. Phillips' address was along the lines of preventive medicine and care of the health. He urged frequent health examination as one of the main safeguards to the health of the nation.

The scientific meetings were held at Fair Park, the permanent home of the State Fair of Texas. The meetings were well attended, the papers were good, and everyone seemed to take a lively interest in the various subjects under discussion.

A wonderful technical manufacturing exhibit filled the whole length of one of the large exposition buildings. It represented the last word along the line of manufacture of the latest instruments and apparatus pertaining to medicine. The scientific

exhibits were well arranged, highly instructive, and were attended by well-informed demonstrators.

The House of Delegates took up many questions and disposed of them in an admirable manner. To itemize the various subjects would be too lengthy a discussion. Suffice it to say the affairs of the Association seem to be capably and safely handled. Dr. Jabez Jackson was unanimously chosen President of the Association for next year, and Dr. John D. McReynolds, of Dallas, Vice-President. Washington, D. C., was named the meeting place for next year by a large majority of the Delegates.

One of the most interesting delegations was the group of physicians and surgeons from the Republic of Mexico. They came as representatives of the Medical Association of that country, an organization very similar to our A. M. A. No one would hesitate to say, after meeting these doctors, that medicine in Mexico is in wonderfully capable hands.

Many receptions and entertainments were held. The dinner given in honor of the visiting delegation from Mexico by Dr. McReynolds, of Dallas, was well attended and appreciated by all. It is functions like these that make medicine international, instead of national, and that is as it should be.

It was a wonderful meeting, but I would say that not many towns the size of Dallas could handle the annual meeting of the A. M. A. as well as Dallas did and I think it would be safer to select the larger centers for the meeting place. This will, no doubt, be taken care of, as there is a move on foot to have the Board of Trustees choose the city for succeeding meetings hereafter, instead of the House of Delegates.

—J. W. BOWEN, M.D.

It was moved that the reports be accepted. Motion seconded and carried.

DR. THOMAS MULLIGAN, Grand Forks: I want to thank the Delegates for the honor conferred upon me.

On motion duly made and seconded the House adjourned sine die at 1:45 P. M.

MINUTES OF THE GENERAL SESSION

TUESDAY, MAY 25, 1926—MORNING SESSION

The meeting was called to order at 8:45 A. M. by the First Vice-President, Dr. Thomas Mulligan, Grand Forks.

Hon. A. J. H. Bratsberg, President of the City Commission of Minot, made the following remarks:

You have selected the city of Minot in which to hold your meeting. When I was requested a few days ago to say a few words of welcome to you, I considered that invitation a high mark of honor.

It gives me great pleasure to extend to you a cordial welcome to the city, a city which splendid men and splendid women have constructed and have made it possible for a small village to grow into a city in which may be found splendid places of business, schools, churches, and, last but not least, wonderful hospitals which would do credit to cities having many times the population of Minot. And

while I extend greetings and welcome to you all, permit me to extend special greetings and welcome to you who have come from long distances, whose names are well known in the medical world and whose contributions to medicine and surgery are of the greatest importance to the civilized world. In the book of Genesis we read that God created the heavens and the earth and all things therein, and as the highest being he created man and to him he gave the instruction to go out and conquer the world, and ever since then man has endeavored to. Our pioneers and our scientists have given so much to the human race; and fitting it is that their names should be inscribed on the pages of the world's history, never to be forgotten. While it has been given to them to study and discover material things, it has been given to you to study science and, the greatest of all, the afflictions of human beings, and for that we pay tribute to you. We are proud of those of your profession who have so nobly sacrificed at times their fortunes and some their lives in the interest of medicine and scientific discovery. We pay tribute to those of you who have so gallantly labored in the interest of health that you may bring sunshine into the hearts and homes of those who are sad and sorrowful and in anxiety and distress.

May the great Creator sustain you in the fulfillment of your duties, and may He reward you for your sympathies and for your contributions to the betterment of the human race.

Again permit me to extend to you on this beautiful morning a most cordial welcome. I trust that your meeting here may be as pleasant to you as it is to us. I trust when you go home you may remember us with a friendly feeling. I assure you that the citizens of this city receive you with open arms and extend to you a most cordial welcome.

Dr. C. G. Hanson, President Northwest District Medical Society, offered the following words of welcome:

I have the honor and pleasure to appear before you in behalf of the Northwest District Medical Society and to extend to you their hearty greetings and a most cordial welcome. It affords me much pleasure to anticipate a large gathering here, representing our profession from various parts of the state and from the larger medical centers of our neighboring states and Canada. With this program before us I have no doubt that every one here will find this to be one of the most interesting occasions in the history of our State Association.

The last fifty years has been epoch-making in the advancements of scientific knowledge, and in no branch has its progress been more pronounced and significant than in medicine where so much has been done to broaden our understanding of disease and to improve medical practice. The pace set by medical progress in recent years, and which still prevails, has made eternal vigilance the price of keeping abreast of the times. Perhaps nothing serves this purpose better than our coming together periodically in large groups and mingling with our confreres whose geographical location to us is conducive to their spending their efforts along special lines of increasing efficiency.

We are indeed pleased to see you here, and while our convention is primarily for scientific and edu-

cational purposes we want you to feel free and to find time for relaxation and hospitality, as well. The members of our local Society have been showing considerable ambition in preparation for the meeting with a view to making your visit to Minot as pleasant as possible, as well as profitable. Just what they have on tap remains to be seen. Our Federal constitution, as you know, guarantees to you life, liberty, and the pursuit of happiness. As to the pursuit of happiness, as far as that pertains to your enjoyment while here with us, some attempt at least has been made to go Uncle Sam one better because all that he guarantees is the pursuit; it is left to you to do the catching up with it yourself.

Again I hope that you will find your visit to Minot very enjoyable and I extend to you once more a cordial welcome.

The response was made by Dr. Robert D. Campbell, Grand Forks, who spoke as follows:

It is my great privilege on behalf of the North Dakota State Medical Association to respond to the cordial addresses to which you have just listened. I want to thank the President of the City Commission and also Dr. Hanson for their kindly words of welcome. The fame of the city of Minot has gone over the land, and wherever and whenever two or three are gathered together for purposes of community interest or social benefit Minot is always represented. I can recall in the early days when this part of western North Dakota was not held in very high esteem as to its agricultural possibilities; many men doubted the advisability of conducting farming operations in the western part of the state. However, we can see fields of growing corn; we can see a manufacturing city with paved streets, beautiful parks and homes; and it has forever silenced those who have taken a pessimistic view regarding your future. I have been personally interested in the growth and development of Minot. I know some of the pioneer physicians, and I am on intimate terms with your men of the present day. It is true that Minot has had many obstacles to contend with, but you have had men who were full of energy and who worked together. Minot is an example of what co-operation from time to time can do for a community. It shows that your leading men have had a real idea as to the future possibilities of a city, and they have been willing to give of their money freely to advance these possibilities. I want to tell the Mayor that I think he is to be congratulated in presiding over such a group of citizens. The medical men, too, have been interested in their community and in their profession. I understand that practically all men registered in this district are members of their local society, and the local society is extremely important. It is in the nature of a clearing-house whereby the men will discuss and air their views on various medical subjects. There is always prevailing a good fellowship, and the doctors learn to know and honor each other. The mere attendance at a medical society meeting is an inspiration to help men go forth and do better for their patients and humanity. A well-conducted society such as yours has a stimulating influence on the doctors to continue in their scientific study. It has been said, and I am sure you will agree, that few occupations are as satisfying as the practice of medicine. I think a community that has at its com-

mand the services of such medical men as are found in this community is extremely fortunate.

Again I want to thank you and to tell you that I am sure that the scientific and social functions which are to be held in your city the next two days will redound with actual benefit to us all.

TRANSACTIONS OF THE SCIENTIFIC MEETING

TUESDAY, MAY 25, 1926—MORNING SESSION

Dr. Thomas Mulligan announced that the President, Dr. John H. Rindlaub, was ill and unable to be present.

The address of the President was read by title.*

Dr. Thomas Mulligan, the First Vice-President, gave a brief address.

Dr. James Grassick, Chairman of the Committee appointed by the Chair to draft resolutions to be sent to the President, presented the following report:

We, your committee, would respectfully recommend that the following telegram be sent to Dr. John Rindlaub, our ailing President, Abbott's Hospital, Minneapolis, and that a copy of the same be spread on the minutes of our Association:

"The physicians of North Dakota in annual session send fraternal greetings with best wishes for a speedy recovery. Beyond the clouds is sunshine, while the ruddy glow of the summer sunsets presages a bright tomorrow, so have courage."

J. GRASSICK, M. D.

C. MACLACHLAN, M. D.

N. O. RAMSTAD, M. D.

It was moved that the resolution be adopted. Motion seconded and carried.

Dr. Emil S. Geist, Minneapolis, Minn., read a paper entitled, "Injury of the Carpal Bones." Discussed by Drs. N. Oliver Ramstad, Bismarck; H. H. Healy, Grand Forks; and Emil Geist, Minneapolis, Minn.

Dr. William H. Lewis, St. Paul, Minn., read a paper entitled, "Inflammatory Affections of Middle Ear: The Responsibility of General Practitioner." Discussed by Drs. M. B. Ruud, Grand Forks, G. J. Gislason, Grand Forks, and W. H. Lewis, St. Paul, Minn.

Dr. O. W. Rowe, Duluth, Minn., gave a Pediatrics Clinic.

Meeting adjourned at 12 o'clock.

TUESDAY, MAY 25—AFTERNOON SESSION

The meeting was called to order at 2 P. M. by the First Vice-President.

Dr. Herman L. Kretschmer, Chicago, gave a Genito-urinary Clinic, illustrated by lantern slides.

*President's Address will appear in a later issue of The Journal-Lancet.—The Editor.

Discussed by Drs. M. W. Roan, Bismarck; A. L. Cameron, Minot; Arnold Schwyzer, St. Paul, Minn.; and H. L. Kretschmer, Chicago.

Dr. Arthur Sweeney, St. Paul, Minn., read a paper entitled, "The Doctor and the Personal Injury Claimant." Discussed by Drs. E. A. Pray, Valley City; W. A. Jones, Minneapolis, Minn.; W. H. Bodensstab, Bismarck; and Arthur Sweeney, St. Paul.

Dr. J. S. Pritchard, Battle Creek, Mich., gave a paper entitled, "Chest Conditions: Use of Iodized Oil in Diagnosis and Treatment of Bronchial Affections." (Lantern slides.)

Dr. David A. Stewart, Ninette, Manitoba, read a paper entitled, "Septic Infections. (Roentgen plates.)"

These two papers were discussed jointly by Drs. J. G. Lamont, Dunseith; W. H. Long, Fargo; J. S. Pritchard, Battle Creek, Mich.; and D. A. Stewart, Ninette, Manitoba.

The meeting adjourned at 5 P. M.

WEDNESDAY, MAY 26—MORNING SESSION

The meeting was called to order at 9 o'clock by the First Vice-President.

Dr. E. T. Bell, Department of Pathology, University of Minnesota, read a paper entitled, "Hypertension."

Dr. S. Marx White, Minneapolis, Minn., read a paper entitled, "Hypertension."

These two papers were discussed jointly by Drs. W. H. Bodensstab, Bismarck; H. B. Huntley, Leonard; A. J. McCannel, Minot; and G. A. Durnin, Bottineau.

At this time Dr. A. J. McCannel, the Secretary, announced the results of the election of officers.

Dr. James Grassick presented the incoming President, Dr. N. Oliver Ramstad. In accepting the gavel Dr. Ramstad said, "I wish simply to thank the fellows of the State Medical Association for the honor conferred upon me by electing me to preside for the incoming year. I will do the best I can to co-operate with you during the coming year."

Dr. Thomas Mulligan on retiring from the Chair spoke as follows: "On behalf of our sick President, Dr. Rindlaub, and in behalf of myself I would like to thank the men who are responsible for this splendid program, scientific and

social. I want to thank them for the group of real papers that we have had on the program. I do not think I have been at any meeting where I have heard so much real "speeching" as I have here."

Dr. A. A. Whittemore, Bowman, State Health Officer, read a paper entitled, "The Goiter Situation in North Dakota." Discussed by Drs. H. H. Healy, Grand Forks; and A. A. Whittemore, Bowman.

Dr. H. H. Healy moved that a resolution be passed by the Association commending the State Health Officer for his work on the goiter problem, to support him in the future, and to try to influence the legislature to appropriate more money for this work. Motion seconded and carried.

Meeting adjourned at 12 o'clock.

WEDNESDAY, MAY 26—AFTERNOON SESSION

The meeting was called to order by the President, Dr. N. Oliver Ramstad.

Dr. W. D. Sheldon, Rochester, Minn., read a paper entitled, "The Differential Diagnosis of Trifacial Neuralgia."

Dr. Arnold Schwyzer, St. Paul, Minn., read a paper entitled, "Surgical Experiences with the Pharyngolaryngeal Area." (Lantern slides.) Discussed by Drs. A. L. Cameron, Minot; E. T. Bell, Minneapolis, Minn.; and Arnold Schwyzer, St. Paul, Minn.

Dr. John M. Dodson, Chicago, presented a paper on "The Work of the American Medical Association."

Dr. Charles MacLachlan, New Rockford, presented the following resolution:

"I feel that we should not allow the opportunity to pass without giving expression to our feelings of gratitude towards the Northwest District Medical Society for the success of this meeting; for the excellent scientific programs furnished; for the many courtesies extended us as a body and as individuals during our brief sojourn in the Magic City. I therefore move, Mr. Chairman, that by a rising vote we give thankful acknowledgement to the local society and to the civic authorities of Minot for their generous hospitality."

Motion seconded and carried by a rising vote.

Meeting adjourned at 4 P. M.

DISTRICT AND COUNTY ROSTER

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 Durnin, G. A. _____ Bottineau
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 Engesather, J. A. D. _____ Brockett
 Engstad, J. E. _____ Grand Forks
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 Ewing, John _____ Kenmare
 Fardy, M. J. _____ Minot
 Fawcett, W. C. _____ Starkweather
 Ferguson, F. W. _____ Kulm
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 Lund, A. B. _____ Leeds
 Lyle, W. D. _____ Havana
 Lynde, Roy _____ Ellendale
 MacDonald, A. C. _____ Valley City
 MacDonald, A. W. _____ Valley City
 MacGregor, Murdock _____ Fargo
 MacKay, A. R. _____ Bottineau
 MacKenzie, J. Ross _____ Carrington
 MacKenzie, J. Roy _____ New Rockf'd
 MacLachlan, C. _____ New Rockford
 MacLachlan, T. M. _____ Bismarck
 McCannel, A. J. _____ Minot
 McCannel, Archie D. _____ Minot
 McCartney, O. D. _____ Carpio
 McDonald, J. A. _____ Cando
 MacGregor, M. _____ Fargo
 McGurken, C. J. _____ Devils Lake
 McIntosh, G. J. _____ Devils Lake
 McKeague, D. H. _____ Maddock
 McLean, R. N. _____ Gilby
 McLean Neil. _____ Devils Lake
 McLean, R. M. _____ Gilby
 McQueen, W. W. _____ Langdon
 Maercklein, E. H. _____ Ashley
 Mahon, Ruth _____ Grand Forks
 Matthaei, D. W. _____ Fessenden
 Mattson, R. H. _____ New Rockford
 Meadows, E. M. _____ Oakes
 Meadows, R. W. _____ Sheyenne
 Melzer, S. W. _____ Woodworth
 Meredith, C. J. _____ Marion
 Meunier, H. J. _____ Oaks
 Miller, H. W. _____ Casselton
 Miller, J. P. _____ Grand Forks
 Moffatt, George _____ Crosby
 Monteith, George _____ Hazelton
 Moore, J. H. _____ Grand Forks
 Moore, W. H. _____ Valley City
 Mordoff, G. E. _____ Hettinger
 Morris, A. C. _____ Fargo
 Movius, A. H. _____ Jamestown
 Mulder, J. L. _____ Cavalier
 Mulligan T. _____ Grand Forks

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 Nachtwey, A. P. _____ Dickinson
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 Newlove, J. T. _____ Minot
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 Nichols, Wm. C. _____ Fargo
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 Nickerson, B. S. _____ Mandan
 Nolte, W. C. _____ Jamestown
 O'Brien, T. _____ Wahpeton
 O'Keefe, Henry _____ Grand Forks
 Odegard, B. _____ Northwood
 Oftedal, Arne _____ Fargo
 Oftedal, Sverre _____ Fargo
 Oftedal, Axel _____ Fargo
 Olson, C. T. _____ Wyndmere
 Ostrander, A. J. _____ Enderlin
 Owens, P. L. _____ Buffalo
 Owenson, H. A. _____ Grace City
 Panek, A. F. _____ Milton
 Parker, R. M. _____ Portal
 Patterson, T. C. _____ Lisbon
 Peake, F. _____ Jamestown
 Peake, F. Margaret _____ Grand Forks
 Pence, J. R. _____ Minot
 Pence, R. W. _____ Minot
 Perkins, Geo. A. _____ Dickinson
 Peterson, O. T. _____ Minot
 Platou, C. A. _____ Litchville
 Platou, L. S. _____ Fargo
 Porter, W. H. _____ Calvin
 Pray, E. A. _____ Valley City
 Quain, E. P. _____ Bismarck
 Quain, Fannie D. _____ Bismarck
 Rainville, S. _____ Crosby
 Radl, R. B. _____ Hebron
 Ramstad, N. O. _____ Bismarck
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JULY 15, 1926

THE SETTLING DOWN OF YOUTH

There have appeared lately in the news press a number of articles on the difference between children or young persons of to-day and those of a quarter or half century ago. There seems to be a general expression of opinion that there is very little difference between these decades in the conduct of the young people, and, incidentally, one might say, of older people, except that to-day things are more in the open than they were in previous years. Miss Jane Addams, of Hull House, Chicago, has a good deal to say about the rising generation, and she admits that, although the present situation appears rather bad on the surface, she already sees signs of a settling down process on the part of the younger people of America. That may be true, but it does not look so at first sight. The World War seems to have been responsible for most of these haphazard methods of living, acting and conducting oneself, especially if one has reached the young adolescent stage, but it also has reacted upon older people, those who are adults in every sense,—anywhere from twenty-five to forty-five years of age. And it is quite natural, perhaps, that the example of one class might change the conduct of another class of individuals. The present behavior of the young is somewhat difficult to explain except, as has been said before, they are more outspoken, more open in their conduct, and are extremely more negligible as to

the consequences. It is quite likely that most of us change our opinions on various things as we grow older, and the reverse is true just at the present time—it is the younger people who change their views of what they call conduct, normal or otherwise.

Miss Addams thinks that the automobile, as well as the war, has a good deal to do with the activities of the young. That is quite true, that is, if the various things that we hear are to be believed. But, again, it all falls back where it belongs, with the parent; and if the parents do not take out an automobile for an evening ride the young do, and where they go and how they go and with whom they go and what they do is nobody's business—so they think. The young are still looking for independence and freedom. They want to know everything. This does not apply, of course, to all of the young. There are still some left who are ready and willing, from education and environment, to stick up for their parents' ideals. But it is rather astounding how many young girls and young boys discuss the marriage question and the probability of eliminating marriage or putting it off until later periods in life, while at the time being they consider companionship the one important factor. However, a lot of these girls and boys talk of things, but they do nothing wrong—they simply talk to make themselves feel that they are up-to-date. When they come to put their ideas into practice, however, they are much disillusioned. They find that their attitude has been wholly wrong, and they realize more keenly their life and its meaning. The man of the family usually complains that his son is wild; but he promptly forgets the wild things he used to do when he was a boy. He may not have been vicious in his conduct, but in all probability he was just as bad as he thinks his son is. It is a part of the existence of youth and adult life. The adults who are brought into close contact with the younger set find themselves slipping. They want the same joys and pleasures that are meted out to the young, and, unfortunately, they adopt the same attitude toward others. They are often inconsiderate, abnormally so; they have apparently very little of the responsibility and loyalty that they should accept as a part of their daily existence, and they neglect and are indifferent to that which goes to make them business men or which relieves the load or the burden upon their relatives. One sometimes think that it is almost a studied condition,—how to get out of doing something, how to get out of responsibilities which have been turned over to them, and how to evade

their consideration for others. They seem to do all of these things very successfully. That again is a matter of adjustment, a matter of influence as to whether they are to slide into an easy position in life or whether they are to work and really attain such position. What is one to do under the circumstances? The older man is apt to feel that his burdens have increased. The younger man does not care. He thinks that everything will come his way some time; very often he knows little of what the reality of things means. Then, too, people are very evasive, not only in their contact with others, but in the spirit, which is expected. Many times they elude definite obligations and it is quite noticeable that prevarication is growing more common. These people are not pathological liars; they are constructive liars, inconsiderate liars, and liars because responsibility is put upon them which they do not like. All of this may lead to nothing, it may be debatable, and the probabilities are that the present human race, not only the young but those toward middle life, will not settle down in the next fifty years, or they may rise up and, through some enthusiasm or mass attraction, blow the top off the tent and scatter themselves where they will. Perhaps the acme of civilization has already been reached, the top is already lifting, and the leaders are disappearing. During the uncertain period which may follow, there will be no active, constructive elements. Then the time comes when there develops a new feature, a new individual who in some way has inherited a tendency to leadership, and he becomes the man of the hour. Others soon follow his example, assist him in his work, and civilization is again on its way.

NEWS ITEMS

Dr. C. G. Arvidson, of Minneapolis, has gone to Europe to visit the clinics for a couple of months.

Dr. I. M. Goldberg, of Minneapolis, was married last month to Miss Blanche M. Halpern, also of Minneapolis.

Dr. Ivar Sivertsen, of Minneapolis, has been appointed by the mayor of the city a member of the Board of Public Welfare.

Dr. L. Q. Greeley, of Duluth, has returned from a six months course of postgraduate work in Vienna and other European clinics.

Dr. G. H. Walker, of the Miller Clinic, St. Paul, has joined the Winona Clinic, of Winona, as eye, ear, nose, and throat specialist.

Dr. R. M. Countryman, of St. Paul, has returned from Philadelphia where he has been doing postgraduate work for several months.

Drs. Sverre and Axel Oftedal, of Fargo, N. D., have returned from Vienna, where they have been at work in the clinics for eight months.

Dr. Leo C. Culligan, of Rochester, has moved to St. Paul, to practice with his brother, Dr. John M. Culligan, who formerly practiced in Rochester.

Dr. M. R. Gelber, a 1925 Minnesota graduate, was married last month to Miss Lola M. Liesch, of New Ulm. Dr. Gelber will begin practice in Minneapolis on Sept. 1.

The Hennepin County Medical Society furnished physicians to enable the Health Department of Minneapolis to give free clinics last month for the administration of scarlet fever antitoxin.

Dr. George E. Putney, of Paynesville, died last month at the age of 80. Dr. Putney graduated from the Medical School of Harvard in the class of '76, and had practiced in Minnesota over forty years.

Dr. W. F. Hartfiel, a 1925 graduate of the Medical School of the University of Minnesota, was married last month to Miss Helen M. Figgie, of St. Paul. Dr. Hartfiel will take up practice in St. Paul.

Dr. Juan C. Santos, of the Veteran's Hospital, St. Paul, has gone to Europe where he will work in the clinics until the end of the year, when he becomes Chief of Staff of the Manila (P. I.) Veteran's Hospital.

Tuberculosis societies and workers in the Northwest say that a Chicago magazine called "Our Tuberculous Children" has no official connections with public societies entitling it to recognition and support.

Statistics from the University of Minnesota show that in 1925 there were 465 students registered in medicine, 332 in dentistry, 203 in nursing, and 163 in pharmacy in the University, not including those in summer courses.

Dr. Frederick C. Willoughby has moved from Winfred, S. D., to Howard, S. D., and will take over the practice of Dr. W. P. Collins of that place, who will take an extended course of postgraduate work and locate elsewhere.

Dr. H. E. French, Dean of the School of Medicine of the University of North Dakota, has resumed his work after a year's leave of absence,

which he spent at the University of Pennsylvania and Wister Institute in research work.

The Madison District Medical Society of South Dakota met at Madison on June 30. Papers were given on *x*-ray diagnosis of gall-bladder disease and *x*-ray treatment of goiter. Dinner was served to the physicians present and their wives; and in the evening a theater party was given.

Dr. Edward E. Holman, of Pine River, died last month at the age of 72. Dr. Holman graduated at the General Medical College of Chicago in the class of '78, and after practicing in Chicago for a number of years he came to Minnesota in 1908, practicing in Pine River until his death.

Dr. G. W. Olson, son of Mr. G. W. Olson, Supt. of the Swedish Hospital of Minneapolis for a number of years, was married in Minneapolis last week to Miss Helen Erman, of this city. Dr. Olson is a recent graduate of Washington University, St. Louis, Mo., and will practice medicine in Los Angeles.

The Sixth District Medical Society of North Dakota held its June monthly meeting at Bismarck. Dr. A. M. Brandt, of Bismarck, presented a paper on "Eclampsia." Dr. C. C. Smith, of Mandan, led a discussion on "Summer Diarrheas;" and Dr. E. A. Pray, of Valley City, gave a talk on "Malpractice." These subjects were freely discussed.

At the annual meeting of the Great Northern Railway Surgical Association, held in Winnipeg last month, the following officers were elected: President, Dr. A. F. Longeway, Great Falls, Montana; first vice-president, Dr. R. C. McDaniel, Portland, Oregon; second vice-president, Dr. C. P. Rice, Breckenridge, Minn.; third vice-president, Dr. W. H. Schnell, Superior, Wis.; secretary-treasurer, Dr. C. B. Lewis, St. Cloud, Minn.

The new Midway Hospital in St. Paul erected as the first unit of a million-dollar hospital plant by the Baptists of the Northwest, was dedicated last week, and the patients in the old hospital building will be transferred to the new building to-day. In a recent issue we published a cut of this handsome structure, which has a capacity of 100 patients and is as complete in every detail as the skill of hospital architects and experienced hospital physicians could make it.

Locum Tenens Work Wanted

By an experienced physician licensed in Minnesota and North Dakota. Address 172, care of this office.

Minneapolis Office Space Available

Good location for physician and dentist over new drug-store in desirable part of Minneapolis. Address 179, care of this office.

Locum Tenens Work Wanted

By a recent Minnesota graduate now doing internship work in Ancker Hospital, St. Paul. Address 171 care of this office.

Minneapolis Office in Fine Location for Rent

Dentist on north side wants a physician to join him in rental of office in a new building. No physician within several blocks. Call Hyland 0262.

Practice in Minneapolis for Sale

Practice and office fixtures and furniture in an excellent location in Minneapolis, on the south side, are offered for \$350. Address 177, care of this office.

Good Unopposed Practice for Sale

A good physician is wanted to take over a good unopposed practice in a town of 500 in S. E. Minnesota. Small investment. Address 180, care of this office.

Office Position Wanted

In Minneapolis by a good stenographer and bookkeeper. Can speak German fairly well. Best of references. Moderate wages. Address 175, care of this office.

Electric Sterilizer Wanted

I desire to buy a second-hand electric sterilizer for office use (alternating current). State particulars: size, make, price, how long used, etc. Address 174, care of this office.

Laboratory Technician Wants Substitute Work

Experienced laboratory technician, and can do physiotherapy. Best of references. Will work for one or two weeks or through the summer. Address 183, care of this office.

Good Opportunity

To join a small group in a community of 40,000. Specialty: obstetrics; children's diseases; eye, ear, nose, and throat work; or internal diseases. Address 169, care of this office.

Drug Store for Sale—Unusual Offer

Clean stock of merchandise and soda fountain. Own building with living apartments on second floor. Location in good town of 400 in South Dakota, and large territory to draw from. No competition. Business is good. Priced to be attractive. Don't pass this rare bargain. Address 176, care of this office.

Office for Rent

Wanted—A physician to share reception offices with dentist, old established, finest offices in the city, second floor of Hulet Bldg., Seventh St. and Hennepin Ave., Minneapolis. Rent reasonable.

Locum Tenens Wanted

Beginning June 27th to August 1st for general practice in a North Dakota town of 350 inhabitants. Unopposed with large territory. Use of office and equipment free. Can have what you make. Address 168, care of this office.

New Connection Desired

A 1923 graduate of a first-class medical school desires to become associated with a high-class man (or clinic) whose major practice is surgery and has hospital connections. Best of references as to attainments, character, and personality furnished. Licensed in Minnesota. Address 186, care of this office.

Fine Location and Fine Office in Minneapolis

There is a splendid location in a fast-growing section with no competition at 2300 West 50th St. Steam-heated modern offices at reasonable rent. End of the Oak and Harriet carline in fine new section of city. Inquire at above location or telephone Walnut 2413 (Christianson Drug Co.) or Hyland 3129 (owner of property).

Clinic for Sale

A clinic in a hustling city in Northern Minnesota County seat. Offices very completely equipped with X-ray, Diathermy, Alpine-Sun lamp, incubator, gas outfit, tables, etc. Also two-fifth interest in modern 25-bed private hospital. Railroad and insurance appointments. This takes two or three men. Price \$10,000. Address 182, care of this office.

Office Position Wanted

An efficient and dependable young woman stenographer, with four years of experience in medical work in a clinic, desires a position in a doctor's office or clinic in the Twin Cities. Am thoroughly conversant with history-taking, medical corporation work and general office detail. A-1 references furnished upon request. Address 185, care of this office.

Wanted

A reliable physician to buy an unopposed practice in a centrally located town of North Dakota. Good schools, churches, water, sewerage, electrically lighted. House completely furnished. Full equipment as it stands. Nearest physicians 30 miles in all directions. Cash practice in 1925 was \$14,000. \$2,000 to cover furniture and equipment to close deal. Terms to suit party. Address 181, care of this office.

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CORRELATION OF CLINICAL AND LABORATORY PROCEDURES IN TUBERCULOSIS*

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AND

FLOYD GRAVE, M.D.

U. S. VETERANS' HOSPITAL

MINNEAPOLIS, MINNESOTA

THE COMPLEMENT FIXATION TEST

In the correlation of clinical and laboratory studies in tuberculosis, the complement fixation test occupies a relatively important position. The fertile yet variable literature on this subject leads to the thought that continued investigations may be productive of considerable personal satisfaction as well as scientific conclusions which may eventually develop more confidence in the practical application of the procedure.

Early in 1922, while this institution was still a general hospital receiving many patients for observation for tuberculosis, we commenced an analytical study which included the consideration of the complement fixation test. We have selected the first 750 cases as the nucleus for a preliminary study which later is to cover diverse features and to include a substantial increment of cases.

Practically all of the patients have been studied clinically by one or both of us while the laboratory conclusions have been developed independently, although supervised by one of us (Grave).

All of the clinical records have been reviewed and tabulations made by us personally, thus insuring close contact with the patient and his record. Bias has been eliminated by considering the complement fixation, per se, the unknown quantity. Special summary cards have been devised and filed as permanent records.

Associated with the clinical interest which centers about this test is that which comes from the historical fact that the first work done with the complement fixation in tuberculosis led Wassermann and his co-workers to the development of the classical reaction in syphilis. Widal and Le Sourd, in 1901, and later Bordet and Gegou, as well as Wassermann and Bruch, made observations in a small number of cases. Subsequently a large number of observers made more or less cursory studies, while relatively few made comprehensive investigations of substantial worth.

Reports were confusing with the result that the procedure was consigned to academic realms. Likewise the antigens and methods were manifold and fanciful, and the originators attempted to convince or cajole to the end that the test became of increasingly doubtful value.

*Presented before the Minnesota Trudeau Medical Society, Minneapolis, May 17, 1926, and published by permission of the Director of the United States Veterans' Bureau.

Bordet and Gegou, in 1903, first demonstrated that there are in the blood of tuberculous animals antibodies which have the power to unite with tubercle bacilli and to fix complement. Wassermann, Koch, Cohn, Bruch, and other investigators using tuberculin as an antigen with varying technic reported quite divergent results. Kuss, Inman, and others, having demonstrated the non-specificity of the antigen, resorted to modifications. This discovery led to the use of emulsions and more reliable extracts of tubercle bacilli. Among the various antigens all of which have their advocates, as well as opponents, are those of Besredka, Miller-Zinsser, Wilson, Fleischner-Ives, and Petroff.

With the development of a few reliable antigens supported by scholarly investigations in this country and abroad, there came a revival of interest and a relatively secure status. At the present time the complement fixation test is a routine procedure in many well organized institutions. This alone would attest to its possibilities and merits.

TECHNIC

Wassermann and complement fixation tests for tuberculosis were run on all blood serums within forty-eight hours after they were taken. The standardized technic of Kolmer was followed strictly in the Wassermann tests. In the complement fixation tests for tuberculosis, Petroff's antigen was employed. Three full units were used with each serum tested.

Complement.—Mixed serum from two or more guinea-pigs was used in a dilution of 1 to 10. Care was taken that the guinea-pigs were free from tuberculosis.

Amboceptor.—Rabbit antish sheep amboceptor of high titre was titrated previous to each Wassermann run and two units used in the complement fixation test.

Sheep cells.—Defibrinated and washed sheep cells in a concentration of 1 of packed cells to 20 of physiological salt solution.

The unit volume of each of the reagents and serum used in the tests was 0.25 c.c. The patient's serum was inactivated at 56° C. for 20 minutes; 0.25 c.c. of this inactivated serum was placed in a Wassermann tube, 0.25 c.c. of complement diluted 1/10, and 0.25 c.c. diluted Petroff's antigen were added in such dilution that 0.25 c.c. contained three units. The whole was increased to convenient volume by adding about a half cubic centimeter of normal saline and incubated in the ice-box for twelve hours.

Twenty-five one-hundredths of a cubic centi-

meter of sheep cells in dilution of 1 to 20 and 0.25 c.c. of diluted amboceptor containing two units of hemolysin were added and the incubation continued for one hour, when the results were read.

Positive, negative, and reagent controls were run during each performance of the test.

TABLE NO. 1.—*Complement fixation in positive sputum cases*

Total	Positive fixation	Per cent	Negative fixation resistance poor	Per cent	Negative fixation resistance good	Per cent
123	94	76	19	15	10	8

TABLE NO. 2.—*Excluding cases of poor resistance*

Total	Positive fixation	Per cent	Negative fixation	Per cent
104	94	90 plus	10	9 plus

Inquiry into 123 cases of known tuberculosis with positive sputum developed that over 90 per cent showed a positive reaction when we exclude those with very poor or negligible resistance. Of the 10 cases with negative fixation and positive sputum, several were patients with small, limited lesions, while the remainder were men whose tuberculosis was simply smouldering, of long duration, or clinically insignificant. One had no pulmonary tuberculosis, but produced positive sputum as a result of ulceration of a tuberculous tracheobronchial gland demonstrated post mortem.

TABLE NO. 3.—*Positive complement fixation versus clinical findings*

Total positive complement fixation	Positive clinically	Per cent	Negative clinically	Per cent
270	251	93	19	7

The figures in this table show strikingly the close agreement between positive clinical findings and positive serological results. If one considers the "constant error" in diagnoses along with the "accidental error" in technic, the specificity and value of the test become quite apparent. The practically parallel results were emphasized throughout our studies by frequent inquiries from assistants who asked why we did not regard the positive test as prima facie evidence of the existence of tuberculosis of clinical importance.

An interesting example of the positive value of the test was seen in the routine examinations of applicants for employment in this hospital. The laboratory reports were obtained in a number of instances before the physical examinations were completed. In three cases showing a positive complement fixation test, active tuberculosis was subsequently demonstrated and treatment recommended.

TABLE NO. 4.—*Negative complement fixation versus clinical findings*

Total negative complement fixation	Positive clinically	Per cent	Negative clinically	Per cent
242	11	4.5	231	95.5

If we exclude 16 cases of frankly poor resistance from a series of 258 cases, we find that the clinical and laboratory results are quite in accord. Among the 11 clinically positive cases there were several which were "arrested," and if these were not taken into consideration, as it seems they need not all be from the practical standpoint, many "arrested cases" being negative, the results would show a surprisingly close agreement.

In practically all of these cases in this large group, the negative complement fixation was a source of considerable satisfaction from the standpoint of confirmatory evidence. Thus there were 95 cases of subacute, recurrent or chronic bronchitis, most of which were sent in to the hospital as "suspected cases" and which we found to be negative. Some of these patients were observed at intervals over a considerable period of time while none, to our knowledge, have returned with a frank manifestation of pulmonary tuberculosis. Eight cases which seemed definitely to be bronchiectasis with no tuberculous element have been studied carefully, two repeatedly over a period of four years.

Focal infections were important in at least 12 cases, sinusitis and dental abscesses being most troublesome. One patient with no less than 20 dental abscesses who had been treated for tuberculosis for months and persisted in showing daily postmeridian fever despite rigid routine, cleared up entirely with the production of a clean although edentulous mouth, the complement fixation remaining negative before and after the procedure over a period of two years.

In nine cases of "suspected tuberculosis," which proved to be examples of hyperthyroidism, the complement fixation was negative.

The usual, confusing psychoneuroses and visceroptoses came in for a fair quota, there being 25 cases in which there was no clinical evidence of tuberculosis with negative serological tests. One such patient had been a "repeater" in hospitals for eight years following his rejection from the draft. There were eight cases of chronic interstitial pneumonitis which have been followed for some time with negative findings as regards tuberculosis. Other cases which added interest to this series were as follows: bronchial asthma (5), pollenosis (3), mitral stenosis (3), blastomycosis (1), streptothricosis (1), Hodgkin's disease (2), mediastinal sarcoma (2), and old foreign bodies in the lung (3).

It is apparent from a study of this large group of observation cases that the negative test is of definite value and can be accepted as fairly conclusive evidence when taken with other facts. We do not, however, recommend too great confidence in the routine negative reactions taken by themselves as exclusionary aids, for here as elsewhere in our diagnostic procedures, "absence of proof is not proof of absence." Subsequent studies of many cases showed the value of the negative fixation as a beacon.

That the test may be, and usually is, negative in patients with a poor prognosis is apparent from a review of our cases. This does not necessarily apply, even in terminal cases, nor is it evident soon enough to be of definite value from the prognostic standpoint. We believe that this finding reflects the unusual resistance and tenacity of the ex-service man, conditions observed clinically, as well as serologically. In this respect the complement fixation test is quite similar to cutaneous tuberculin reactions. Similarly, the complement fixation is frequently found to be negative in patients who are actually ill, for example, in cases of consolidation following hemoptysis. This is not necessarily of serious prognostic omen, as not only good resistance but also a positive fixation may return in a relatively short time.

TABLE NO. 5.—*Questionable and borderline cases*

Total	Positive complement fixation	Per cent	Negative complement fixation	Per cent
156	43	27.5	113	72.5

For the purpose of comparative study of our cases, it seemed necessary to classify 20 per cent as either questionable or border-line cases. This necessity arose by virtue of the fact that

the majority of cases in this group were those in whom a diagnosis of pulmonary tuberculosis had been made at some time prior to admission to this hospital, which diagnosis was either confirmed with difficulty or merely carried as a matter of expediency. The difficulty in the diagnosis in many of these patients was further enhanced by indeterminate or conflicting *x*-ray findings. In the smallest group of cases, the final solution rested with the autopsy protocol. From the practical standpoint, the majority of these questionable cases with positive complement fixation were those in which a diagnosis of tuberculosis was eventually made or in which very careful follow-up examinations were recommended.

A brief résumé of the questionable or borderline cases shows that of the 43 cases with positive complement fixation, 20 were cases of chronic or recurrent bronchitis, the majority of whom had a history of either influenza or inhalation of gas. Certainly in most of these cases, the patient deserved either the benefit of considerable doubt or of frequent follow-up examinations, both of which were employed with the necessary caution. Nine cases represented pleurisy either of the dry or wet type or the remains of an old suppurative process. Certainly with our knowledge of the etiology of pleurisy and with other factors at hand, such as history, physical findings, and positive complement fixation, a diagnosis of tuberculosis was warranted in the majority.

The other cases which caused considerable difficulty were interstitial pneumonia (3), bronchial asthma (2), bronchiectasis (2), syphilis (2), and a scattering of other non-tuberculous diseases. One case of blastomycosis which had to be carried as a questionable case of tuberculosis for a long time eventually produced a sputum positive for bacillus tuberculosis. One questionable case of pleurisy with effusion with a positive complement fixation showed tubercle bacilli in the fluid upon animal inoculation.

Another questionable case in which a previous diagnosis of pulmonary tuberculosis was made and in which the complement fixation was positive, was thought to be negative for tuberculosis and after the development of frank symptoms of cholecystitis, was operated upon, the preoperative and postoperative findings being positive. Death eventually ensued in this case, and the post-mortem findings showed the presence of a few tuberculous tracheobronchial glands but no pulmonary involvement. Carcinoma in the region of the pancreas and ampulla of Vater was also found. This group could be discussed at con-

siderable length, owing to the fact that many of these cases were observed for a very great period of time while in or out of the hospital, with interesting results. The fact was evident that it was especially worth while to follow up these questionable cases with positive complement fixation inasmuch as a fair percentage were subsequently found to be removed from the class of questionable cases and to be grouped eventually as cases of clinical tuberculosis. Certainly the concealed tuberculosis, which, as in the case of the patient with cholecystitis, might conceivably be the source of a train of vague symptoms, a syndrome manifested also in many other patients.

Those with negative complement fixation tests were certainly a source of considerable perplexity. The vast majority of these were what might be termed inactive cases. Many of them had carried a diagnosis of tuberculosis and had been connected with service for a long time. None of these, to our knowledge, was in need of hospital treatment, which conclusion was verified in the main by subsequent observation, both in this hospital and in the outpatient clinic of the regional office. A small number of cases of a non-pulmonary nature which offered confusion were eventually eliminated, partly through the aid of the negative fixation test. Notable examples were several cases of hyperthyroidism which for a long time were carried as questionable or "arrested" cases. One patient with mediastinal tumor came to us with a diagnosis of tuberculosis; postmortem examination revealed sarcoma. One case of blastomycosis with negative fixation has never, in the two years of our observation, displayed a sputum positive for bacillus tuberculosis. Two patients with Hodgkin's disease, erroneously diagnosed elsewhere as tuberculosis, were in this group; also one patient, quite ill and showing streptothrix in the sputum, who has carried a diagnosis of pulmonary tuberculosis for over two years but has never, to our knowledge, had tubercle bacilli in the sputum.

Our study of this whole group of cases leads us to the conclusion that the complement fixation test should be considered along with other evidence and that it serves to strengthen the chain by adding a link of considerable weight. However, in this large group of cases where the exercise of sound judgment is so essential, a diagnosis should not be influenced too greatly by the positive or negative serological findings. It will be found in the routine employment of the test that the blood examination will serve to stimulate more thorough investigation of the case as a whole.

The ultimate study of all of these cases left few questionable or border-line cases.

INACTIVE PULMONARY TUBERCULOSIS

In those cases in which a definite and final diagnosis of inactive pulmonary tuberculosis was made, the positive and negative fixations were quite evenly divided. There were 18 positive cases and 17 negative. The test may be either negative or positive in any given case of apparently healed disease but is more apt to be negative in the event of pulmonary fibrosis either limited or of fair extent.

TABLE NO. 6.—*Complement fixation in the three stages*

Stage of disease	Total	Positive		Negative	
		Num-ber	Per-cent	Num-ber	Per-cent
Minimal.....	16	15	93	1	7
Moderately advanced.....	168	151	90	17	10
Far advanced....	111	88	79.4	.....	.....
Good resistance.....	.....	.....	.....	2	1.8
Poor resistance.....	.....	.....	.....	21	18.8

It is observed in a study of the classification of our cases that the test was positive in a greater percentage of early and moderately advanced than far advanced. Excluding far-advanced cases with definitely poor resistance, fixation of complement occurred in over 93 per cent of all cases diagnosed clinically.

COMPLEMENT FIXATION IN RELATION TO TERMINAL DISEASE

Our tabulations include 32 patients who have died of pulmonary tuberculosis and its secondary lesions. During some period of hospitalization 20, or 62.5 per cent, gave positive complement fixation tests, while 12, or 37.5 per cent, gave negative reactions.

It was occasionally noticed that some of these cases with advanced and multiform lesions gave negative tests in the terminal stage of the disease. However, this is of very little value as a prognostic test, as the outcome could be foretold by other means than the complement fixation test. Negative findings do not militate against the test as a diagnostic measure, for, as a matter of fact, such a test is not often necessary as an aid in terminal cases. On the other hand, we expect that antibodies are frequently absent toward the close of the disease, thus anticipating the failure of fixation of complement.

That positive fixation is present in such a high percentage is not surprising. Many of the tests were done far in advance of the death of the

patient. Certainly if we had followed up the laboratory examinations at regular intervals up to the time of death the percentage of positive findings would have been much smaller.

SPINAL FLUID EXAMINATIONS

In a note upon the utilization of the complement fixation reaction in the diagnosis of tuberculous meningitis in *Laboratory and Clinical Medicine* for April, 1922, by R. A. Kilduffe, it was suggested that the complement fixation test could be an aid in making a definite diagnosis where other means might fail. Five spinal fluids from patients with tuberculous meningitis were examined by the complement fixation method and all were found positive. In two of these cases we were able to find the tubercle bacilli in direct smears from the spinal fluid after long search.

Five other random cases, including one meningitis form of poliomyelitis, one epilepsy, one lethargic encephalitis, one tabes dorsalis with negative Wassermann and one with positive Wassermann, were examined by the same method and all found negative for fixation of complement for tuberculosis.

A patient with cerebrospinal lues gave a negative complement fixation test for tuberculosis and a positive Wassermann in the spinal fluid. The complement fixation for tuberculosis in the blood was positive while the Wassermann was negative. This was a definite case of pulmonary tuberculosis.

WASSERMANN POSITIVE CASES

Our series includes 37 positive Wassermann cases, all of which are clinically positive for syphilis. Twenty-three gave negative complement fixation tests. All of these cases are clinically negative for tuberculosis with the exception of one of tuberculosis of the spine.

Fourteen of the cases gave both positive Wassermann and complement fixation tests for tuberculosis. All are clinically positive for syphilis and all are clinically positive for active or quiescent tuberculosis with the exception of one very questionable case.

The potential value of the complement fixation was forcibly emphasized in several instances. One man in question came into the hospital with a history of syphilis and of recent hemorrhage from the lungs. All findings were indefinite or negative, excepting the complement fixation for tuberculosis and the Wassermann, both of which were strongly positive. A diagnosis of syphilis and inactive tuberculosis was made. This patient returned in one year with positive Wasser-

mann and complement fixation for tuberculosis, positive physical and Roentgen findings, and positive sputum.

In another instance a patient was sent in to the hospital with a diagnosis of tuberculosis of the lungs and a metacarpal bone, in which case the *x*-ray interpretations were confusing. The Wassermann not previously taken was strongly positive upon examination in three separate laboratories to which we sent the blood. The complement fixation, on the other hand, was negative. On the strength of these findings and a definite history subsequently obtained, anti-syphilitic treatment was pursued very energetically, with the result that marked diminution occurred in the size of the diseased bone. The general condition of the patient improved remarkably and early discharge was effected. The diagnosis of active tuberculosis was removed.

A third patient gave a positive complement fixation test for tuberculosis and a positive Wassermann reaction. Under treatment the Wassermann became negative but the complement fixation test for tuberculosis remained positive. This case might have led to the suspicion of a non-specific cross-fixation of complement in the early period of our studies, but the change from positive to negative in the Wassermann while the tuberculosis fixation test remained positive, we believe, ruled out this possibility, the case being clinically positive for both diseases. Eventually the sputum was found positive for tubercle bacilli.

Another patient of special interest was under observation in this hospital in the early days of our work. His complement fixation for tuberculosis in the blood was positive and the Wassermann reaction negative. The spinal fluid gave a positive Wassermann. At that time no definite reliance was placed in the complement fixation test as a diagnostic clue. The man was transferred to a distant hospital for treatment of pulmonary tuberculosis. He returned shortly with a diagnosis of cerebrospinal lues and no tuberculosis. On further study after the second admission, the tests of the spinal fluid and blood remained unchanged but the sputum had become positive for tubercle bacilli. Not only the diagnosis of tuberculosis but also that of syphilis, as previously made, proved correct.

From these cases and somewhat similar ones, one necessarily concludes that there is a definite value to the test. It is our opinion from a review of these cases that there is no indication of a nonspecific cross-fixation of complement, at least, with the technic employed in our labora-

tories. This is especially encouraging in view of the fact that the antigen used in the Wassermann test is a lipoidal substance and nonspecific in character, while the antigen in the complement fixation test for tuberculosis also contains a considerable amount of lipoidal bodies and is specific. However, one must never lose sight of the possibility of cross-fixation.

TABLE NO. 7.—*Extrapulmonary tuberculosis*

Case	Positive complement fixation	Negative complement fixation
Cervical nodes.....	4	3
Spine.....	3	4
Bone; other.....	5	.....
Genito-urinary.....	3	1
Peritoneum.....	2	.....
Ischiorectal.....	1	.....
Empyema tbc.....	.....	1

Twenty-seven cases diagnosed as extrapulmonary tuberculosis with no demonstrable lung foci were tested by the complement fixation method; 18, or 66 2/3 per cent, were positive and 9, or 33 1/3 per cent, were negative.

Comparison of these cases with the pulmonary cases would indicate that the complement fixation test is less satisfactory in the extrapulmonary cases. However, it must be said that not all of the cases were definitely determined, by biopsy or other procedures, to be tuberculous cases.

The percentage of positive results is considerably greater than that obtained in a study of 40 extrapulmonary cases in which we employed a ring test.

PROGNOSIS AND DURATION OF DISEASE

As stated previously, we are of the opinion that the test is of little value in prognosis. It is possible that in any given case in which repeated observations are made at reasonable intervals, the complement fixation may become negative before the general and local conditions would indicate failure of immunity. Our experience has been that the complement fixation is usually last to indicate impending disaster. Likewise transient negative findings in the blood may occur during exacerbations of the disease.

Frequently in definitely proved old, treated cases the complement fixation is negative. However, it may be said with a reasonable degree of assurance that a positive complement fixation is indicative of either manifest or healed tuberculosis, the extent of which is not to be estimated with any degree of accuracy by reference to the intensity of the reaction. It is probable that the complement fixation in tuberculosis bears the

same relationship to the disease tuberculosis as does the Widal reaction to typhoid or paratyphoid fevers; for example, in a study of 1,000 cases of tuberculosis in 1914 one of us (Joseph) found a patient with a positive Widal and bacillus typhosus in the feces whose history of typhoid dated back 33 years. In our present series we have found one patient with a positive complement fixation whose original clinical pulmonary tuberculosis commenced over 25 years ago while he was on duty in the Philippine Islands. Other patients gave definite histories of treatment for active pulmonary tuberculosis at such remote periods as 16, 12, and 7 years ago. We, therefore, wish to caution against the value of the test as a definite indicator of activity, no matter what the strength of the reaction may be.

THE COMPLEMENT FIXATION TEST COMPARED WITH OTHER LABORATORY TESTS

Recently we have been interested in carrying out observations which would throw some light on the relative value of various laboratory procedures as compared with the complement fixation test. At present we are employing the Larson ring test and the various tuberculin reactions. We are also preparing to use a commercial ring test. The flocculation tests will also be investigated in our laboratories. Thus far we are not in a position to make satisfactory deductions but we simply mention this in passing in the hope that others will pursue similar studies and later exchange results and conclusions.

CONCLUSIONS

1. The complement fixation test for tuberculosis occupies a relatively important position and should be employed as a routine procedure in the diagnosis of tuberculosis where a considerable number of patients are being studied and good laboratory service is available.

2. It appears that there is little reason to believe that a positive complement fixation indicates anything short of tuberculosis, either manifest or concealed.

3. The complement fixation properly performed is a substantial and reliable serological test applied in the study of tuberculosis and merits further development.

4. It is superior in scientific accuracy and practical applicability to such tests as ring or flocculation tests.

5. Agreement of results was found in over 90 per cent of all cases when compared with clinical diagnoses.

6. We must not demand absolute results in this procedure any more than in other measures in which there is always a factor of probable error.

7. The test is specific.

8. It is usually negative in those who are acutely ill or who are in a terminal phase of their disease; it may, however, be negative even in early, active cases.

9. It may be negative when the disease is arrested, although not necessarily so.

10. It is not an indicator of prognosis nor of duration of disease.

11. Neither the complement fixation test nor any similar procedure is specific to the extent that it shall dictate when treatment shall be instituted or discontinued.

12. Neither the complement fixation nor any other laboratory procedure should militate against the exercise of sound clinical judgment.

13. Continued efforts should be put forth to standardize technic and antigen.

14. There is no indication of a nonspecific cross-fixation of complement, although this possibility should be borne in mind.

15. Great caution is necessary in ruling out pulmonary tuberculosis simply because the Wassermann test is positive and syphilis is demonstrated.

16. The complement fixing powers of the blood of tuberculous individuals are relatively less than those of syphilitic ones.

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PUDIC ENNUI

BY RALPH ST. J. PERRY, M.D.

MINNEAPOLIS, MINNESOTA

With all due deference to mankind, the same being purely masculine, it may be said the average male is very little interested in the perpetuation of the species. He is, however, very greatly interested in the art of copulation. With the onset of puberty micturition becomes a secondary genito-urinary function and the incidence of the initial phallic turgescence an incentive to ventures in a new field of endeavor.

The present status of economic and social conditions is such that many people to-day are prone to seek the marital pleasures of life without desire to assume parental obligations, or even those of matrimony. From pubescence to senility life, for some, is one continuous round of physiological synthesis, and woe betide the day when there comes an ebb and the Satyr awakens to the fact he is no longer 100 per cent efficient.

Sterility due to aspermia seems to cause very little worry to the average man; the high cost of living and other factors have added to the attractiveness of bachelorhood and detracted from the glory of paternity, and many men, too many, seem to think that so long as they can indulge in an exchange of pleasures with a reciprocal affinity they are doing their share in making life worth while.

To these the onset of copulative incompetence comes as a calamity. There is a difference between sterility and copulative incompetence. A man may be capable of performing sexual intercourse with the most perfect technic, and yet, because of aspermia, defunct spermatozoöa or anatomical defects be a negative quantity as a procreative factor. He may have his vesiculæ seminales hyperdistended with virulent spermatozoöa, but if he be incapable of copulating he is a "dud."

In analyzing over a thousand cases of copulative incompetence the conclusion has been reached that all could be ascribed to one or more of the following causes:

1. Anatomical defect or abnormality, congenital or acquired.
2. Neurasthenia.
3. Psychic conditions, congenital or acquired.
4. Focal infections.

The first and last groups call for operative or mechanical treatment and the psychic group for an adjustment of the perverted cerebration. By far the largest number of cases falls into the

class variously ascribed to "nerve exhaustion" or "sexual neurasthenia." Occasionally this condition is associated with one of general debility, the sequel of a protracted enervating sickness, the tedious convalescence from a severe injury, or to senility.

More often it occurs in a man in the prime of life who is physically and mentally strong, who presents the picture of vigorous health, but who has, down in the depths of his pelvis, a little tired, worn-out nerve. Such cases I have accused of suffering from pudic ennui; a circumscribed nerve exhaustion, limited to the nerve supply of the sexual organs. That such a condition can and does exist is maintained because so many cases have been seen where only those parts supplied by the pudic nerve were involved, where all other body functions were apparently normal and where treatment directed to the supposedly affected parts resulted in a restoration of function.

Some years ago one of my friends who had calmly accepted his sexual decline as a to-be-expected phenomenon of his progressive senility informed me that the extraction of an abscessed tooth had been followed by an unexpected return of sexual virility. Soon thereafter another friend, an army colonel, whose health was "all shot to pieces," with pudic ennui as a part of his symptom complex, went to an army hospital for treatment. A thorough examination failed to reveal any pathology except an abscessed tooth. The "old snag" was eradicated, and a second miracle was recorded.

Several patients were called in and re-studied with a view to possible focal infections, and in each case the removal of abscessed teeth, old crowns, or infected tonsils resulted in such an immediate improvement in general health, and especially in sexual vitality, that there is now no doubt in my mind regarding the efficacy of this adjuvant treatment. To-day every patient is carefully examined for a possible focal infection and if found it is removed.

There is a rather large group of individuals in whom there has developed a condition of sexual inertia brought about by prolonged abstinence, in which no pathological condition can be discovered but where the patient, because of the prolonged abstinence, has lost the "habit" of indulging in sexual intercourse. It has long been

recognized that copulation is more or less a matter of habit and that persons who have become habituated to frequent intercourse lose their copulative ability after a prolonged period of continence. This phenomenon has been so frequently observed in the cases of soldiers, sailors, prisoners, and isolated workers that it excites little comment amongst such who find themselves so afflicted.

Prolonged abstinence apparently seems to have no deleterious effect upon those who have never practiced frequent indulgence. An analogous phenomenon has been often observed in women who, because of widowhood, imprisonment, marital separation, or other inhibiting conditions suffer sexual deprivation. While physically capable of indulging in intercourse they become passive or submissive and seem to have lost their desire and derive no pleasure from the act.

To facilitate comprehension of this subject let us review the neurology of this field of inactivity. The penis and most of the tissues of the rectum and bladder are supplied by the pudic nerve, deriving its component fibres from the second, third, and fourth sacral nerves, which emerge from the spinal canal through the anterior sacral foramina. Adjuvant nerve supply is received from the prostatic plexus of the sympathetic nerves. The stimulus to erection (or the inhibition thereof) may be—

1. Central, emanating from the brain.
2. Spinal, having its origin in some disease, injury or irritation of the cord.
3. Median, due to irritation or stimulation along the course of the pudic nerve.
4. Peripheral, following titillation of the terminal filaments of the pudic nerve.
5. Sympathetic or reflex, coming from remote sources through some affiliated part of the sympathetic nerve system.

Cerebral stimulus, or inhibition, may be conscious, subconscious, or unconscious; and the psychic impulse may be initiated by anything which will convey aphrodisiac, or anaphrodisiac, impressions, impulses or suggestions to the brain through any of the special senses. The sympathetic or reflex impulse is transmitted to the sexual organs from distant parts of the body through the prostatic sympathetic plexus.

Any stimulus which acts primarily as an erectogenic may lose, by prolonged continuance or too frequent repetition, its activating properties and become a contributory factor to phallic lipothymy. What was once a most powerful sexual excitant may by excessive use or even slight misuse arouse an aversion and loathing, to overcome which will

tax to the utmost the ingenuities of the most learned and skilled therapists.

In the pre-Elizabethan age of transportation, in the "good old days" before Dobbin had been supplanted by "Lizzie," we were wont to urge our steed to greater endeavor by gentle titillations with the whip. As Dobbin grew accustomed to and ignored the titillations we added to the force thereof. Gradually we increased the dosage, and perhaps reënforced the same with verbal imprecations, but all to no effect, for Dobbin had learned to tolerate and had acquired an ennui. So, too, the pudic nerve may learn to tolerate and may acquire an ennui.

What is the prognosis in these cases? Usually, good, and especially good where the patient will co-operate with the physician. Much depends upon the general physical condition and more upon the mental attitude. Most gratifying results are usually secured in those patients whose troubles are due to a run-down physical condition. I have known men of excellent physical condition to become acutely melancholic over an easily remedied sexual disability and commit suicide.

The early morning erection, which frequently greets the patient at 5:00 A. M., is a most important factor in prognosis, being an indication of functional competence and demonstrating the ability of the phallic vasomotor controls to respond to a stimulus. The congestion of the corpora cavernosa and the consequent turgidity and rigidity of the penis, can be accepted as *prima facie* evidence of latent ability, and the problem is to find and eliminate the inhibiting factors, to disclose the activating impulses and discover through what channels to reach and arouse them.

The question is frequently put, "What is the best treatment for these cases," and the answer is, "There is no best treatment." Each individual case must be given an analysis calling for the most searching inquisition into the sexual experiences and habits of the patient, with his complete venereal history. A careful and thorough examination of the organs must be made to discover or exclude local pathological conditions. Psychic conditions must be studied to disclose any morbid impressions which may in any way influence the patient either through habit, perversion, or idiosyncrasy.

Notwithstanding the seemingly adverse conditions which have occasionally followed prolonged continence it is my opinion that the most valuable of Nature's restorative measures for the jaded habitué is complete sexual rest, both physi-

cal and mental. Therefore, my first prescription is a proscription. All sexual relations and all matters tending towards such, the latter including salacious literature, conversation, stories, movies, plays, and by-plays, are forbidden. Remove the temptations and suggestions, and a great deal has been accomplished towards helping the patient maintain his sexual rest.

Every patient (and his wife) is given some "brass tacks" information on sexual matters; the physiology of the reproductive function is explained, the whys and wherefores, the whens and hows, and, lastly, the therefore. This information is conveyed in plain everyday English, without technicalities or offensive obscenity, but in the current vernacular of the day which everyone understands. Not many persons to-day are possessed of a right knowledge of sexual matters, although rated as reasonably intelligent in general affairs. This is not at all strange when one considers the present day attitude of parents, the expurgated educational system and the vast amount of misinformation, ignorance and vile nonsense that has crept into literature and is foisted upon a receptive public under the guise of "sexual hygiene."

The prescribed period of rest should extend from three to six months, and to prevent the patient from falling into a condition of absolute desuetude he is put upon a course of light gymnastics, if not already doing gym work. Dumbbells, indian clubs, an elastic exerciser, and the setting-up exercises of the army will afford ample work for the patient. If desired, an hour or two in the evening at a club gym, followed by a shower and rub-down, is not objectionable and often is advantageous, as the environment, if of the right sort, will help to "keep his mind off his thoughts."

A warm bath, not hot and never cold, followed by a good massage and a brisk rub-down is a most excellent adjuvant to any form of treatment. Personally, I am opposed to the cold bath; it is decidedly injurious to many, although stimulating to some. In my experience the stimulus is transitory and the end-result a drain upon the reserve energy of the patient which induces lassitude and an aggravation of an already exhausting condition. The static breeze is a good therapeutic measure, not only helping to restore lost nerve tone but producing a psychic effect which is good. The faradic current is also good. Experience with diathermy is insufficient and too brief to venture an opinion at present. Diathermy is just now enjoying a wave of popularity and will be very much used and misused in any

and all conditions, and it will be some time before dependable data can be presented.

Mention has been made of psychic conditions in these cases. Lest the reader overlook it, let me emphasize that every case has a psychic element in it, regardless of and *particeps criminis* with other causes. No person can be the victim of a condition which nullifies one of Nature's first laws, which tends to defeat the objective of one's existence, and not give thought thereto. Too often this gives rise to a mental attitude which interferes with recovery. To overcome this, resort is frequently had to suggestive therapeutics. The psychic analysis of the patient's case should disclose the nature of the neurosis, for such it is; and a suitable line of suggestions should be outlined and carried on to counteract the effect of the psychic perversion. After more than forty years of experience with suggestive therapy the writer still regards it as one of the most valuable remedies at our command in the treatment of functional disorders of the sexual system.

Many, in fact most, of these patients we find handicapped by the presentiment of failure, an anxiety or fear neurosis, and the curative effect of one act of copulation successfully accomplished is greater than that of any or all other remedies combined. The psychic effect of having accomplished the objective, with all of the accompanying exaltation and thrill of conquest and the realization of a restored virility is something that no drug can produce and at once re-establishes the patient's self-confidence.

Of drugs there is little to be said. The useful general tonics are few, and the dependable aphrodisiacs are fewer. Many have been tested and found wanting. Some of those most loudly vaunted and given the most persistent publicity have proved to be failures. To-day only strychnia and phosphorus have withstood the brunt of battle. Opium still retains a following in the Orient and "Near East." Damiana is under a cloud; cantharides is feared because of its irritating effects and yohimbin has fallen by the wayside too often to be dependable.

Gland therapy in this field is enjoying a recrudescence, with some prospects of limited availability. Just now it is a refined and dessicated revival of the "lamb fries" * of half a century ago with which the gallants of sporting proclivities were wont to restore their jaded spirits. Many endocrinologists predict a wonderful therapeutic usefulness for the gland treatments, single

* "Lamb's fries" were lambs' testicles, sliced, dipped in beaten egg, rolled in cracker crumbs, and fried in butter.

and mixed, but time and experience only can determine. Meanwhile those who feel so inclined can join the throng and put the endocrines to the test. Most of these patients are of that class who will "try anything once," are "good sports" and "good losers," who take their losses philosophically and forget them rapidly, who appreciate success and will co-operate with their physician. They are good material for experimental therapy.

Of the many drugs accused of possessing aphrodisiac properties no one has been more generally used than phosphorus. But even with all its vaunted restorative powers it is only a general tonic, and its effects upon the sexual organs are but a part of its action upon the economy as a whole. The best results have been secured from doses not exceeding one one-hundredth of a gram, given in connection with other drugs. If the patient objects to pills and capsules there are many liquid preparations of phosphorus which can be utilized.

Strychnia is the second drug most popularly used as a sexual tonic and, like others, it is a general tonic without special affinity for the sexual system. The forms most commonly used are the sulphate and nitrate. To be effectual strychnia must be given in sufficient dose. My practice is to give 1-30th grain doses during the first week, 1-15th grain during the second week and 1-10th grain during the third week, and continue with the latter dose for a period of four weeks; then drop back to 1-30th grain and increase as before. Strychnine has a cumulative effect and the system becomes very tolerant of the drug. The patient should be carefully watched for evidences of untoward action, and to prevent any such the method of administration here outlined has been followed.

Adjuvants of several kinds have been used in connection with phosphorus and strychnia and the following prescription is one from which most satisfactory and propitious results have been secured in many cases.

R	Ferri sulph exsicc.	.....	grs. xxx
	Ergotin "Bonjean"	.....	grs. 15
	Strychnia sulph.	.....	gr. 1
	Phosphorus	.....	gr. 1/3
	Aloin	.....	grs. 2
	Mix ft. capsules	xxx	

Sig. One capsule at 8:00 A. M., 12 noon, and 4:00 and 8:00 P. M. daily.

The patient is admonished that at 12 midnight and 4 A. M. he should be in bed—alone. The second prescription is similar to the first except the amount of strychnia, which is increased to

two grains, and in the third prescription to three grains. In writing these latter prescriptions the attention of the pharmacist should be called to the fact that the amounts of strychnia prescribed are "O.K." and not an error in writing. Some pharmacist may protest the use of phosphorus in an extemporaneous pill-mass, but the problem is one of easy solution and should cause no trouble. My personal experience is that it is best to select one or more reliable, competent pharmacists and see that the prescriptions go to one of your choice.

Ergot is a drug which is credited with having erectogenic properties because of its action upon the blood vessels; the theory being that by its vasomotor control it aids in creating and maintaining that congestion of the corpora cavernosa so essential to phallic rigidity. The iron salt is given as a general tonic and reputed "blood builder." Quite frequently the pyrophosphate is used instead of the sulphate. Aloin is a peristaltic promotor which tends to correct the constipating effect of the iron and also induces congestion of the blood vessels of the lower pelvic organs.

Opium is a drug which for centuries has enjoyed in the Orient and Near East a reputation as a God-given aphrodisiac. During two years practice amongst Mohammedans (1885-7) this use of opium was frequently brought to my attention but there has always been a question in my mind whether or not the charm of the occasional dose of opium did not chiefly lie in the fantastic and erotic visions conjured up by the drug. In addition to its several other effects opium induces constipation and a distended rectum gives rise to an erection, through irritation of the rectal terminal fibers of the pudic nerve. Any genito-urinary surgeon who has massaged a prostate via the rectum can testify to the fact that a comparatively small amount of irritation of the branches of the pudic nerve will cause an erection.

This same effect is seen following the distention of the rectum with the mass of fecal matter which accumulates during sleep, and distention of the bladder with urine secreted overnight. Probably no phenomenon in nature has been so generally misunderstood as the matutinal priapism. Universally regarded as a call to arms, it is really a call to latrine duty, and upon evacuation of the rectum and bladder there is an immediate disappearance of the malapert turgescence. In my opinion the aphrodisiac activity of opium is simply a by-product of the constipation caused by the drug. The deleterious other effects of opium are such as should prohibit its use as an aphrodisiac.



CONGENITAL BRAIN DEFECTS: A CLINIC*

By W. A. JONES, M.D.

MINNEAPOLIS, MINNESOTA

These cases I wish to show you are quite common, although we do not see them as often as we ought to, and frequently we do not recognize them.

CASE 1.—This girl is fourteen years old. She has a very good family history as far as it can be determined. I think if we could go a little further back in the generations, two or three decades or even a century, we might have a better idea of why these people suffer from an arrest in development.

The only disease this girl had was measles at six years of age. She began to be a woman at thirteen years. She had an operation for a femoral hernia in 1918, and about the same time had her tonsils and adenoids removed. This is the common procedure in most of these cases, and it is done with the expectation that the removal of the tonsils and adenoids may lead to a better development in some of the other glands of internal secretion. I am not decrying the operation at all, for it is quite the proper thing to do. This girl was generally pretty well, but was constipated, as many of these children are who are arrested in their growth. She has not attended school now for two years because of "nervousness," whatever that means.

Since she was four years of age she has been having attacks of unconsciousness which come at irregular intervals, sometimes three or four weeks apart, sometimes only a day or two. They are preceded by a chilly sensation. She has tried to describe it to me, but cannot get beyond the chilliness, and yet she is not cold. It is a peculiar disturbance of sensation. She has a tickling along the lower spine and in a minute or two becomes unconscious. The aura she has is a little different from those ordinarily present. She sleeps for a few seconds only, as a rule. Her face will become blank, and then she will go on talking as if nothing had happened. She has no involuntary trouble with the bladder. She has always had good control of that, but she is very emotional at times. She walks rather slowly and stoops a little, as you can observe (requests patient to walk up and down the pit). The blood Wassermann reaction is negative. She sometimes has an attack which lasts two or three minutes with no discomfort. She is five feet

tall, rather small for her age, and has a sallow complexion, which has improved greatly under her mother's careful care. There is a slight enlargement of the thyroid. The teeth are irregular, and the palate high arched, which is common in these people. She has no urinary disturbance, is fairly intelligent, reads some but does not do much to entertain herself, and has to be looked after pretty closely. Her pupils are quite large and irregular, and respond to light and distance, but are fixed in their size. She has left ankle clonus and increased reflexes in both extremities.

There is not much more to say about this case except that such patients can be benefited by a little attention. As a rule they do not live right. The family is unable to take proper care of them until properly directed. They should be restricted in their diet. They usually eat too much and not the proper food. This girl has increased in weight about two pounds since January of this year. In order to take care of this girl she must be placed under some sort of medication, and we usually have to experiment a little. I have a doctor friend in New York who uses seven different kinds of medicine to find out which is the best for the epileptic attacks that occur in his patients. We still stick to the old fashioned bromide. They do not need much—ten or fifteen grains at a dose is usually sufficient. In addition to that we have another very important remedy in luminal. It is surprising how much they can take. This girl needs only one and a half grains a day, usually at bedtime, and she sometimes has a dose in the morning when she wakes if she is having attacks. At such times she needs something to regulate the bowels, but as a rule they are normal.

There are no localizing symptoms in this case. It is a general arrest in growth of the entire brain. The head is of fair size in proportion with the rest of the body. The reflexes are normal now, but were at first much exaggerated. I suppose many of these patients have exaggerated reflexes because they are under the strain and excitement of being examined. She is regular in her menstrual periods and usually has an attack a few days before. I do not know whether or not this has anything to do with the attacks. I know that sometimes these people are operated on with the hope of lessening their attacks, but

*Presented at Minneapolis Clinic Week, Minneapolis, April 30-May 2, 1925.

I have seen very little improvement brought about by operative procedures in the cases of arrested development.

Anything that can be done to improve the condition of the epileptic is a source of great rejoicing, and one is justified in going to considerable trouble to relieve the attacks and lessen their severity. We cannot expect a recovery in this class of cases. All we can do is to keep the attacks down to the least possible number, and decrease their severity. This child will probably not grow much, will probably not expand much in her nervous system, and all we can hope for is a fair degree of comfort.

CASE 2.—This little girl is now nine years old. She was seven when she first came in. She is getting along fairly well in her school. Her parents, as you see, are very well nourished and apparently in normal good health. The mother is perhaps a little larger than she should be, but aside from this there is nothing abnormal.

This child had mumps when she was two years old and began to have attacks somewhat similar in character to those of the child who just went out. During the first summer she had three convulsions and was then well until late in December. Then she had more attacks. The parents think the trouble came on on a very hot day, which is quite probable. Whether it was due to the heat or some other trouble is not known, but in the beginning she had only an occasional fit. As the months and years went by the attacks increased in number until she sometimes had fifteen or twenty a day. On one occasion she had two or three attacks a day for two weeks, and usually they occurred both day and night. They were preceded by abdominal pain, but that was supposed to be due to some digestive trouble or to drinking an enormous amount of water so that she had to get up frequently to empty the bladder. After the 21st of December she had attacks for some time.

She is still a very active child, but she was superactive when she was first seen. She ran around the office and did all sorts of childish things. After a time she began to calm down but still showed deficiency in manner.

In February, 1924, she had measles with a high temperature, and as soon as convalescence was established she had more attacks. They usually last one minute or a minute and a half. When she comes out of the attack she laughs.

She was placed on luminal, one tablet at night and another in the morning. She took a fair amount of bromide and soda, but this did not

agree with her very well, and she gets along better without it.

Between June 27 and December she did not have an attack, and then began to have attacks about one a week. The last three have been conspicuous because of the fact that she did not have much loss of consciousness. She has not been in school since 1923, except for a very short time last fall.

The thing that struck me particularly was that she was too fat for a girl of her age when she was first seen. She has reduced her weight and grown taller. She will doubtless continue to grow, for she has no arrest in her brain development, such as was present in the other case I presented.

(At this point the child had an epileptic seizure which lasted unusually long.)

She had a mental rating of about three years, according to the tests. At times she comprehends very poorly even when in her usual condition. She had not had an attack for two weeks, but the present one has demonstrated her condition better than I could describe it for it was a fully developed attack.

CASE 3.—This boy is four years old. His father is alive at thirty-three and his mother at twenty-eight; both are well. The mother is a very intelligent woman. The parents state that the child had an eczema at the age of one month and an attack of pneumonia one month later. A tonsillectomy was performed in August, 1924. At three months of age he had his first attack of unconsciousness, with a definite convulsion,—rigidity, biting of the tongue, and involuntary urination. Since then the attacks have become more frequent and severe until he has had fifteen to twenty in twenty-four hours. The attacks come at night, and he usually is tired and sleepy after an attack, the same thing that happens to most of these people. He is very restless and nervous and lacks interest in things. He wants his own way very much, like many other children who are sick and spoiled, and he has his own way.

He was brought down here and placed in a hospital for observation. He had definite adenoids, which were successfully removed, and since then he has improved markedly. His mother says he has had no attack since March 19. He has been fed on luminal and has had some bromides, and has had particularly some iron, which we thought he needed. His hemoglobin was low, and he was quite pale. I suppose the adenoid condition was partly responsible for this state. He has a high-arched palate and dry skin.

It is well in these cases to investigate very carefully. The Wassermann test was made on both the blood and the spinal fluid and both were negative. He was given some small doses of mercury, which may have had something to do with it. I wish we knew more about the early onset of syphilis. It is difficult to tell about this even in the presence of a negative Wassermann reaction on the blood and spinal fluid. There may be a condition which is transmitted down in these cases from far back in the family. There is no harm in putting them on antisyphilitic treatment for a while, and sometimes we get splendid results. This child's mother says he has improved markedly in many ways. He now talks and plays with other children and takes more interest in things. I know when he was brought to the of-

fice after his adenoids had been removed he was very different. He greeted the office force and seemed to understand the situation. I think he will improve further if we can keep him from having the attacks and watch his throat and adenoid condition carefully. There is always a gain when these children are suffering from some of the disorders of the glands of internal secretion. This is a very common feeding ground just now, and we are all trying experiments with pituitary gland and thyroid extract. I think these are the only two that can be credited with good results in these cases. These children can often take five, eight, or ten grains of pituitary extract three times a day without any discomfort and with considerable benefit.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of May 12, 1926

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, May 12, 1926, at 8:00 P. M.

The meeting was called to order by the President, Dr. H. L. Ulrich. There were 40 members present.

The minutes of the April meeting were read and approved.

Dr. Carl B. Drake (St. Paul) reported a case of diaphragmatic hernia, as follows:

E. C. T., aged 48, married, a clergyman, was first seen at 3 P. M., August 15, 1924. At that time he was complaining of an agonizing pain over the entire abdomen most severe in the epigastrium and felt in both shoulders and arms. The pain began after lunch, and vomiting occurred with relief. There had been some stomach distress for three or four days, which was relieved somewhat two days previously by a dose of *Sal Hepatica*.

The preceding fall he had had an attack of severe abdominal pain, fever, and jaundice associated with obstinate constipation, and he had been laid up several days. Except for typhoid fever, in 1899, and influenza, in 1921, his past history had been unimportant.

His appetite had usually been good, and ordinarily he had no trouble with his bowels. His weight had been about 245 pounds for the past twenty-five years.

The patient was a large person, evidently in great pain. Temperature, 99.8°; pulse, 80; no jaundice. He was acutely tender over the upper abdomen, both to the left and the right of the midline, and pressure over the epigastrium caused pain in both shoulders. A small umbilical hernia was easily reducible. A hypodermic had to be repeated for relief.

Although he felt relieved the following morning he complained of pain on deep respiration, and by afternoon his temperature was 102°, and he required another hypodermic.

On the third day he was taken to St. Luke's Hospital where his leucocyte count was 25,400; urine, sp. gr., 1.032; albumen, xxx, many granular and hyaline casts, no acetone or diacetic acid; blood pressure, 130/88.

Vomiting continued until August 23d, the vomitus at times being dark brown and bitter, but never fecal in odor. The stomach was washed on this date, and fluoroscopy showed a normally located cardia, a filling defect at the prepyloric area, and a barium shadow high in the duodenal region at a higher level than the fundus. My impression was that a gastric ulcer had perforated.

By August 28 the leucocytosis had gone down to 15,000, the urine had returned to normal, and the temperature had been in the vicinity of 100° for several days. On this date a laparotomy was performed by Dr. Harry P. Ritchie.

Upon opening the abdomen the omentum was found extensively adherent to the structures in the upper abdomen. The adhesions were separated, but search failed to show any sign of stomach or duodenum.

Reaching into the region of the fundus, the stomach could not be identified. A large, distended, thickened gall-bladder, surrounded by adherent omentum, was removed. Convalescence was uneventful except for a slight elevation of temperature.

A later fluoroscopy by Dr. E. Schons showed the actual state of affairs. Upon drinking the barium, the cardia was seen to fill in its normal position below the left diaphragm, and the fluid was distinctly seen to return above the level of the diaphragm between the heart and spinal column in the midline. The antrum of the stomach, pylorus, and descending duodenum were herniated apparently through the esophageal opening.

The accompanying illustration is an x-ray taken

in the diagonal position and shows the heart shadow in the center, the filled cardia to the left and the antrum to the right of the heart. Faint streaks of barium show the position of the stomach lying in the esophageal opening, and the filled duodenum is visible returning through the opening in the diaphragm.

The question of attempting further operative procedure arose. It was felt that the hernia was probably congenital, and the relation of the undoubted gall-bladder involvement to the anomaly was uncertain. It was decided to postpone further operative procedure.

If the acute abdominal attack, as manifest by the toxic symptoms of fever, albumen, and casts, was entirely of gall-bladder origin, cholecystectomy would doubtless prevent further attacks. If due to a strangulation of the stomach and duodenum, which was spontaneously relieved, recurrence would be likely.

The patient left for his home in Arkansas a short time after recovery from the operation. A recent communication from him states that about six months later he "nearly died of an attack of intestinal flu which seemed to partially paralyze the stomach and intestines."

He continued to be troubled with gas on the stomach, which clabbered milk and buttermilk relieved. He has lived largely on this diet since last December until recently, when he has been able to eat almost anything but potatoes.

Diaphragmatic hernia has been much more frequently diagnosed and reported since the advent of the *x*-ray. In 1923 Coley states that Griffin had collected 650 reported cases, only 15 of which had been diagnosed before operation or autopsy. Knoggs reported 63 cases of hernia of the stomach, 23 of which were congenital, 21 traumatic, and 12 acquired, the acquired ones being through the esophageal opening. Wilkes drew attention to the existence of excessive thirst in cases of strangulation of the stomach.

Non-traumatic hernias of the diaphragm probably depend on acute or chronic increase of intra-abdominal pressure. According to Abbott, they occur through one of the so-called preformed openings of the diaphragm which are—

"1. The esophageal foramen.

"2. The foramen of Morgagni at the junction of the sternum and the seventh costal cartilage on either side.

"3. The foramen of Bochdalek posteriorly between the lumbar and costal divisions of the diaphragm.

"4. The point of entrance for the sympathetic nerve, between the external and median crura."

These hernias are much more common on the left side, and hernia through the esophageal opening is much the most common. No case of hernia through the orifices of the aorta or vena cava has been reported, according to Abbott.

Abbott believes that small hernias at the esophageal opening are more common than generally recognized. Some such cause few symptoms. Others produce epigastric pain, acid eructation of stomach contents, and vomiting. They may be easily overlooked in routine *x*-ray stomach examinations in the erect posture. These slight hernias may be demonstrated by the patient straining in

the horizontal position, being viewed in the oblique position under the fluoroscope.

The case here reported may have been acquired, the overweight having caused excessive strain on a congenitally weak esophageal opening in the diaphragm. The presence of an umbilical hernia suggests the likelihood also of a weak esophageal opening. The gall-bladder thickening and omental adhesions might well have been secondary to diaphragmatic strangulation. The shoulder pain, aggravated by abdominal pressure, is a good example of referred pain through phrenic nerve irritation. The recurrence of an attack since operation, similar to the one observed, indicates that what we observed was a strangulation of the stomach and that operative relief will in all probability have to be resorted to.

DISCUSSION

DR. ZIMMERMANN (St. Paul): A little over a year ago I took care of a case similar to the one reported by Dr. Drake. This patient, too, had also been operated on for a gall-bladder and the gall-bladder removed. In spite of this operation he suffered frequent attacks of pain in the epigastrium. This pain would be relieved by taking alkalies to a slight extent. He had some of the characteristics of peptic ulcer. The *x*-ray revealed a picture almost identical with the picture here exhibited by Dr. Drake. The stomach was drawn up above the diaphragm into the posterior mediastinum. The bismuth meal would leave the esophagus and would turn into the posterior mediastinum and then gradually come out into the duodenum through an opening apparently in the diaphragm. A diagnosis was made of diaphragmatic hernia through the esophageal opening.

A laparotomy was made. It was found impossible to reduce the hernia, and, if it were possible to reduce it, it seemed impossible to close the opening. There was quite a pouch of stomach that had not herniated and to this pouch I made a posterior gastro-enterostomy. This was a year ago, and the man has been thoroughly comfortable ever since. I am unable to say whether his relief is due to the short circuiting of the portion of his stomach and duodenum contained in the hernial sac or whether the man actually had a duodenal ulcer in that part of his duodenum that could not be seen, and this was relieved by gastro-enterostomy. In any event, he is comfortable at the end of a year.

DR. STRACHAUER (Minneapolis): I have operated on two cases of diaphragmatic hernia, one of the congenital type and the other of traumatic origin. In the second case the entire stomach, about six feet of intestine, and a large quantity of omentum had herniated through the ruptured diaphragm into the thorax. Both cases were operated on through the abdominal approach. The hernial contents were reduced, and the opening in the diaphragm closed without difficulty, really with comparative ease. The diagnosis in these cases, however, was not readily arrived at. The traumatic case followed an automobile accident, and had been *x*-rayed, carefully studied, and treated elsewhere with a diagnosis of hemothorax. The patient's condition gradually improved, and she was up and about and enjoyed a fair degree of health for a number of months. She later developed acute attacks of pain and smothering in the chest, which were con-

sidered to be cardiac in character. Auscultation of the chest, however, disclosed bubbling sounds. A gastro-intestinal study showed the stomach and bowels above the diaphragm, and a correct diagnosis was finally made.

DR. MANN (Minneapolis): These cases all illustrate the fact that the diagnosis is most important. The main point in these cases, in fact, is the diagnosis. In the past, before the war, very few of these cases were diagnosed. Most of the cases were found in the routine of an autopsy and were not suspected before death; a few were discovered during an operation for some other condition; some of them have been discovered accidentally in an x-ray of the chest for some other supposed condition; occasionally a diagnosis has been made because a gurgling sound has been heard on a careful examination of the chest, such as could come from no other organ than the bowel or the stomach.

There were so many traumatic hernias of the diaphragm during the war and the x-rays showed them so definitely that the x-ray has been used more and more extensively in obscure cases involving the chest, or in cases in which a diaphragmatic hernia might possibly be suspected, that more and more cases have been discovered in civilian practice. Gurgling in the chest and the x-ray, with the bowel containing the barium mixture showing in the chest, are both practically positive for a diagnosis.

But I wish to remind you that if gurgling is not heard, or if, in the examination of our patients, something does not attract our attention to the possibility of a diaphragmatic hernia or something abnormal in the chest so that we employ the x-ray, then we are no better off for diagnosis than they were forty years ago, and the diagnosis will be missed.

As to symptoms, they vary from nothing at all to very severe ones, depending on the organs involved and the ways in which they are involved. They may vary, as to the intestinal, from mild to the more severe grade, and, as to the stomach, from mild to the more severe. There may be tachycardia from pressure on the heart. If the examination of the chest detects gurgling, your diagnosis is almost made. So, even without the x-ray, you can almost make a diagnosis if you can hear gurgling. The diagnosis with the x-ray, if properly used, is almost absolutely sure.

As to the surgical operation. Some of these cases without adhesions are not very difficult but those with adhesions of the organs in the chest or in the posterior mediastinum are exceedingly difficult, as those of us who have had such cases to deal with know full well.

DR. ULRICH (Minneapolis): I would like to make a point regarding Dr. Drake's case and the toxemia. He thinks toxemia is due to nephritis. That may have been due to the acute obstructive symptoms of the higher portion of the bowel. Rowntree has called attention to the acute obstructive syndrome with findings in the urine resembling nephritis. If a blood chemistry had been done you might have found the chlorides reduced and the urea nitrogen high. Blood tests should be done on Dr. Drake's case the next time he presents himself with acute symptoms. We recently had a case at the General Hospital of right-sided diaphragmatic hernia. The

colon was involved in this case. The bowel was replaced and the hernia reduced by operating through the thorax. Gradual collapse of the lung was induced by pneumothorax and then the patient was successfully operated on through this cavity.

Dr. Chas. W. More (Eveleth) reported a case of fracture of the spine.

Dr. Donald C. Balfour (Rochester) read his thesis, entitled "The Management of Peptic Ulcer."

DISCUSSION

DR. STRACHAUER (Minneapolis): This is too important a paper to pass by without discussion.

It is not alone that the clinical results following the excision of gastric ulcers have been greatly improved, but the importance of obtaining the lesion for microscopic examination should be emphasized. In ulcers 1 centimeter in diameter or larger, it is absolutely impossible grossly to ascertain the presence of benignancy or malignancy without microscopic examination. These cases should be handled like questionable tumors of the breast. Microscopic examination of the frozen section should be made immediately, and, of course, when malignancy is present a suitable type of partial gastrectomy immediately performed. It is in these cases requiring a microscopic examination for diagnosis that we are to achieve improved results in the surgery of malignancy of the stomach.

I have had cases of ulcer in children, one of the stomach in a child eleven years old, and the other of the duodenum in a child of thirteen, in both of which simple excision without gastro-enterostomy gave entirely satisfactory results. I should be interested to learn what Dr. Balfour's experience has been in the treatment of ulcer in children.

In endeavoring to solve the problem of ulcer by operation, the surgeons have had their "fling" and periods of enthusiasm for first one operation and then another. All this has been productive of good, for as a result we have at our disposal a number of operations having definite limitations and special indications. The surgical treatment of ulcer has become one of the most satisfactory special fields in our practice. The anatomical location of the ulcer, its attachment or penetration into neighboring structures, the presence or absence of pyloric obstruction, the degree of gastric acidity, the presence of bleeding, and the phase of the ulcer—whether active or inactive—are all factors of the greatest importance and must be taken into consideration in determining the type of procedure indicated in the special case at hand.

DR. ZIMMERMANN (St. Paul): I am very glad to hear Dr. Balfour defend gastro-enterostomy and the more conservative surgical treatment of duodenal ulcer. It is most distressing to see the tendency to do wide and mutilating operations on the stomach for apparently quite small lesions.

DR. SCHWYZER (Minneapolis): It is very gratifying to hear Dr. Balfour's paper this evening. The subject is so large that one does not know where to start. It occurred to me to mention a case I had years ago. The patient was first operated on for appendicitis. A year later I diagnosed a subdiaphragmatic abscess, which I successfully drained.

The man was complaining considerably two years later, when I made a gastro-enterostomy without any complications. The patient left the hospital a week later. After five years he came in a very desperate condition and presented a complicating peptic ulcer. He had a perforation in his stomach, a hole between the stomach, the large intestine, and the small intestine. There was quite a mass to find the way through. The patient died.

I have had quite a number of perforations of the stomach, respectively duodenal ulcers. I discharged one of them only last week. The question of importance is: Should we do a gastro-enterostomy or not, or possibly a gastrectomy? That depends on circumstances and the condition of the patient. If operation is done early enough and the condition of the patient is fair, I would think a gastro-enterostomy was indicated in such a case. I have had seven perforating ulcers, with good results. Every one of the patients is living to-day.

A question which I would like to bring out, and which is really more interesting to the internist, occurred to me through the reading of the European literature; and that is whether we treat these cases, after gastro-enterostomy or gastrectomy, correctly. There is a Russian, Jarotski, Professor of Internal Medicine at the University of Moscow, who brought out the fact that the treatment of those cases is mostly incorrect. Basing his study upon physiology, he brought out the fact that any kind of diet for the ulcer which does not overcome the hyperacidity is incorrect. He condemns milk. He claims that milk has a quality which makes it remain too long in the stomach. When a part of the milk is given up to the duodenum, the pylorus shuts off immediately and a good deal of the milk remains in the stomach. He claims that after he had brought the acidity of the stomach to normal, all he would have to do to bring on the hyperacidity again was to give the patient more milk. His diet consists of albumen from the whites of egg and non-salted butter. He claims to be able to control pains from ulcers very promptly by this diet. The first day he gives the white of one egg in the morning and in the afternoon 20 c.c. of saltless butter and increases that to ten eggs a day plus 160 to 180 c.c. of saltless butter.

He claims if that course were followed by the surgeon after these operations, we would have better results.

DR. H. T. NIPPERT (St. Paul): I would like to ask Dr. Balfour what is the percentage of malignancy following duodenal ulcer?

DR. BALFOUR (in closing): Concerning the occurrence and treatment of peptic ulcer in children; duodenal ulcer does occur in children and is often the hemorrhagic type so that in such cases there would be a preference for a local excision of the ulcer and a pyloroplasty.

As to how much of the stomach should be removed to create an achlorhydria, I prefer to do a rather limited resection; and in examining the gastric contents of a number that I had done recently I found that achlorhydria was present in all of them.

In regard to malignancy in duodenal ulcer; it is commonly supposed that this never develops in a duodenal ulcer, but instances of malignant degeneration have been reported. We believe, however, that malignancy in duodenal ulcer is very rare.

In conclusion: I think we ought to keep clearly in mind, in the management of these cases, first, the difference between gastric and duodenal ulcer. In duodenal ulcer many patients get well by doing nothing. Certainly if I had duodenal ulcer I would try and get well with non-surgical treatment. If I could not get well with medical treatment, I would have the most simple operation that could be performed. The most simple one is gastro-enterostomy. If I did not get well on that I would have a radical operation. Most clinics report 2 per cent gastro-jejunal ulcer.

As regards the after-care which Dr. Schwyzer so interestingly spoke about: it can be overdone both ways. It can be overdone by telling patients they can do anything they please. In those patients who have a great tendency to recurrence, I think you will often find there are certain things they are doing which they should not do. One of the most important points concerns smoking, and this is illustrated by the fact that when Boas has had a patient referred to him for peptic ulcer, he looks for cigarette stains on his hands and if he finds such stains he refuses to treat him.

Dr. J. G. Cross (Minneapolis) read a paper entitled "The His Bundle and Its Disturbances."

DISCUSSION

DR. G. E. FAHR (Minneapolis): The whole history of the discovery and physiological investigation of the His system has rolled before my eyes in my own short medical career. His gave his first complete description in 1904, just before I entered medical school. Then, in 1906, Retzer had just come back from His' laboratory where he had made the first histological study of the bundle, and he became my teacher in anatomy. Hering had just cut through the bundle and found that if he cut it entirely in two he got complete block. The first problem I was given to work on when I was a student at Johns Hopkins was the investigation of the nerve supply to the bundle. In 1906 Tawara made the classical investigation of the whole system from the A-V node out into the finer arborizations of the system in the subendocardial layers of both ventricles. From 1904 to 1907 the fundamental investigative work was done. With the exception of certain of the problems of etiology, the chapter is almost a closed one on anatomy and physiology; perhaps etiology is the one part not yet satisfactorily worked out.

Probably the majority of cases of temporary heart block follow rheumatic fever and other acute fevers, and the more permanent cases are found associated with coronary sclerosis. And then of course there are these cases following infection which Dr. Cross described, where we do not know just what happened. Oppenheimer is probably correct in saying that the majority of permanent blocks are mostly all due to coronary disease.

We thought the opening up of this field would open an important contribution to medicine. We had this large group of hearts with no rheumatic fever and no infectious etiology, called myocarditis, and they died of heart failure. Explaining it on the pathological findings is not always satisfactory. Disturbances of conduction were thought to be of great importance for the work of the heart and might explain

cases of heart failure not explained by the slight pathological findings.

Heart block apparently becomes a deleterious factor for the work of the heart only when it results in a 2:1 block, that is, reduces the ventricular rate below 50-60. Beyond that point there is about a 40 per cent reduction in the work of the heart, according to Eyster's investigations. Up to that point it does not make very much difference. The arrhythmias which do interfere with the work of the heart are fibrillation, flutter, paroxysmal tachycardia, and frequent extrasystoles.

I am surprised that the men who are practicing outside of the large city hospitals see so many of these cases. Just recently I have been going to the City and County Hospital to look for heart block for teaching purposes. In two visits to the City and County Hospital, one visit to the General Hospital, and frequent visits to the University Hospital, I have seen only one case of complete heart block with Adams-Stokes' syndrome. In my experience, heart block is not common, and Adams-Stokes' disease is very rare.

DR. GILFILLAN (St. Paul): These cases of course are of very great interest, and especially the pathology of them. I think during life the pathology is problematical. If we find a luetic we think it may be a gumma of the septum. I have seen some hearts with carcinoma. We do see it, however, when it is difficult to tell what the pathology is. Unfortunately these cases have a way of becoming very dear to their friends after death, and I have not had many postmortems on them.

The cases I speak of especially are young people. I have a young man under observation, with ordinary slight infections, who developed a block which has kept on and on for years. This man I saw first six years ago with typical Stokes-Adams.' What is the cause in that man? What is the cause in these cases where we cannot demonstrate arteriosclerosis? We can say, of course, that one of the infections through which they have passed has caused degeneration of the septum involving the bundle, and the condition arose from that. I wonder if that is so; but I never saw one. In these cases in younger people where there is no syphilis and the etiology is doubtful, I have always wondered what the etiology really was.

It does not take much to produce heart block; that is, it can be produced without any visible lesion in the bundle. Most of these cases of block are not complete all the time. The young man I spoke of would have fifty or sixty attacks a day, with a pulse of 20 or 30, and then he would come out of it. The bundle has never been completely severed. It is a play between partial block and complete block; a 2 or 3:1 rhythm, and the coming of a complete block and the development of the Stokes-Adams' syndrome.

These cases are probably more common than we think because they are apt to be mistaken for something else. I remember before the days of the electrocardiograph there was a patient in the hos-

pital, and the doctor said that old man had epilepsy. His pulse was 26. I told them to take him over to my ward as I wanted to study him, and I watched him in many attacks. I got a postmortem of the heart and sent it to the University, and they promptly lost it.

I recall a case I saw some time ago. The doctor in charge called me in consultation; he thought the patient had brain tumor and slow pulse. It probably is not as uncommon as some think.

The working out of the system has come mostly in Dr. Fahr's time, but not all. We had the Purkinje fibers when I went to school.

DR. ULRICH (Minneapolis): As to the finding of block: I think we do see more of this in private practice than in the hospitals. The terrifying and horrible part of this disease is the tendency to asystoles. It is this tendency which produces the Stokes-Adams' syndrome. How can we prevent asystoles in these cases? Many drugs have been used: atropin, adrenalin, digitalis, amylnitrite. Recently Cohen and Levine have called attention to three cases in which they used barium chloride. From animal experimentation they have learned that calcium and barium increase the irritability of the ventricle. In their three cases they were successful with barium. We recently had a case where the ventricular rate was 18 to 26 and the auricular 54. We kept that man alive with barium chloride for three weeks, and then he failed us.

In this connection recently there has been a contribution which relates to the extrinsic nerves of the heart. In the current number of the *Journal of Clinical Investigation* (February) DeGraff and Weiss have taken eight cases of heart block at Bellevue Hospital, testing out the action of drugs on the extrinsic nerves of the auricles and the ventricles. They have shown that there is practically no vagus control of the ventricle, and that there is richer sympathetic supply to the ventricles than the auricles. Atropinization of the vagus has the same effect on the auricular rate in heart block as it has in a normal heart. It does not affect the rate of the ventricle in the heart block. They have also tried digitalis without any perceptible change of the rates of the ventricles. Adrenalin had a distinct increase on the ventricular rate, and this was more evident after the atropinization of the vagus. In our case adrenalin and barium seemed most successful in preventing asystoles.

DR. GILFILLAN (St. Paul): The case I spoke of has had barium and went without asystoles for a considerable time.

DR. CROSS (closing): There is very little that I care to add in discussion. As I mentioned before, it early became evident to me that a discussion of the subject of the His bundle must remain incomplete without clinical data and illustrations. I hope to add these at a future time.

JOHN E. HYNES, M.D.,
Secretary.

PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of March 18, 1926

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, March 18, 1926. Dinner was served at 6:00 P. M., and the meeting was called to order at 7:00 P. M. by the Vice-President, Dr. Kenneth Phelps. There were twenty members and one visitor present.

The minutes of the February meeting were read and approved.

Dr. Max Seham gave the paper of the evening, entitled "A Psychophysiological Study of School Children."

This was illustrated with numerous charts and lantern slides.

DISCUSSION

DR. SEHAM: There are one or two points that I want to emphasize. I have used the term "chronic fatigue" not as a symptom of fatigability, nor do I refer to that form of acute fatigue which the psychologists have been doing so much work with. I do not know whether *fatigue* is the right word. There is a great deal of difference as to what the word really means. I have in mind a psychophysiologic syndrome of more than three months' duration which is manifested in four ways:

1. Signs of fatigue.
2. Decrease in the child's average mental ability.
3. Decrease in the child's average physical strength and endurance.
4. Emotional unbalance.

All of our children had at least two of these, most of them had three, and a large number had all four points.

DR. BROOKS: What do you think about our present method of teaching? When I have visited the schools, it seemed to me to be a matter of speed. Questions would be asked, and the object seemed to be to find the speed with which the children could answer. This method might have some relation to the matter of fatigue.

DR. SEHAM: I am not an educator and cannot answer that directly. Since I have been in this work I have come in contact with a good many teachers and experimenters in education. There is a great stir throughout the country in getting what is considered an adequate public school schedule based on physiologic needs. It seems strange that it is only in the last few years that people have awakened to the importance of it.

In Chicago the McCormick fund is being devoted largely to that particular problem. They have access to the schools and are given quite free range to do as they wish.

I think the best system, from the standpoint of health, is that in Rochester, New York. I spent a whole day going through the schools there. They have a longer day than ours, but it is broken up into five periods for rest and devotion to health. The pupils have three periods of rest in which they put their heads down on the desks and just try to forget themselves. It is surprising how the children relax. Then there is one period in which the windows are opened, and the children walk around in-

formally. Then they have morning inspection. The teacher has all the children pass by her and she examines them for cleanliness and for signs of contagious disease. The children like it. Every day they have fifteen-minute exercises in health. They do not have to memorize the bones in the body or learn by rote facts in physiology. Even in the second grade it was most hopeful to see the way those little children answered questions, such as "What is a germ?" or "What is the importance of being healthy?" They had definite, positive points of view concerning health.

That system has been used for four years. They have about 60,000 school children and twenty-seven school physicians, while here we have about 72,000 and eight school physicians. Of course it takes money to do that. They have about one hundred members in their health department. These are primarily instructors in physical education who have taken postgraduate work in health education. They really have a positive, practical program.

To me that is the most advanced system from the standpoint of health. They can have almost anything they want in those schools. In one of the gymnasias they had lockers, and in every locker there was a blowing system for drying the hair. That is really almost a "frill," you might say. Besides that they have a pool filled with supposedly sterile water, fed by a stream under a violet-ray machine. That is their general attitude toward health in Rochester.

DR. BOREEN: Do you know how the health of the children there compares with other places?

DR. SEHAM: No, I do not know about that.

DR. PHELPS: How about the relative merits of private and public schools?

DR. SEHAM: That I do not know. I would like to get into a private school and do some work. Most of the private schools have only half-day work.

This work shown tonight is only a beginning. To me it is very important from the standpoint of private practice. We do not know enough about the individual child. You cannot know everything about it from just the orthodox physical examination. Mr. Webster and Dr. Harrington have given me access to certain schools. In one school I found one boy who had been failing for six months in the first and second hour subjects and was all right in his subjects the rest of the day. We thought that was rather odd. He was very irritable, would not eat breakfast, and was losing weight. After a while we found out that for about six months he had been having midnight radio concerts about three times a week. He had fixed up some kind of a special arrangement, and his father and mother had no idea he was doing this. That was the whole trouble, and as soon as that was corrected he was all right. Removing the tonsils and administering iron would not have helped that child at all. One had to get a complete analysis of the background.

Dr. S. R. Maxeiner showed a patient and reported the history and operation for aneurysm of the common carotid artery.

DONALD MCCARTHY, M.D.,
Secretary.

THE JOURNAL-LANCET

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FLOWERS BEFORE THE FUNERAL

A very pleasant example of community spirit was shown by the people of Detroit, Minnesota, recently, in the way of public appreciation of one of the resident doctors. Dr. Leonard C. Weeks has practiced medicine in Detroit for over thirty years. Last March he suffered from a paralytic stroke and was obliged to take a lengthy rest. In order to get away entirely from the trouble incident to practice, the doctor took a three months trip to the West, returning in June restored to health and strength. A number of his friends decided that a few flowers bestowed before the funeral were worth many tons of bouquets given after he was dead; therefore they arranged a public picnic with the doctor as the guest of honor. At the picnic supper given in the public park the Mayor of the city presided, and speeches in appreciation of the doctor's work were made by a number of citizens, including some of the doctor's colleagues in medicine; and at the close the doctor was presented a gold watch suitably inscribed.

Looking at this from an outside standpoint, it appears to us that the citizens of Detroit honored themselves fully as much in this little affair as they did the recipient of the appreciation. It too often happens that a doctor slips away from his earthly labors before his friends take any tangible note of his work, and then flowers fall upon the coffin that dead eyes cannot see, and words

of affection and appreciation are spoken which dead ears do not hear. We congratulate the people at Detroit for grasping the occasion for expressing their affection for Dr. Weeks before it was too late for him to realize it.

THE RESPONSIBILITY OF CRIMINALS

It is rather interesting to note that in a recent issue of the *Saturday Evening Post* Dr. Louis E. Bisch, who for some years was at the head of the New York Psychopathic Laboratory, writes a very condensed but scientifically correct account of the responsibility and punishment of criminals. Dr. Bisch is known as an expert in psychiatry, and he has examined, both physically and mentally, thousands of persons arrested in New York. He started in with the idea that all criminals were either defective or abnormal, and hence not responsible for their deeds; but he was very much surprised after his investigations to learn that 95 per cent of the criminals are rational persons and as responsible for their acts as any other normal individual, and that the remaining 5 per cent, he admitted, had either a subnormal, defective, or unsound mind. The latter, he thinks, should be segregated for life for their own protection, as well as for the good of the community. Naturally, to segregate them before their crimes are committed would be a great social advance.

Other men who have made similar investigations and who were called upon to determine the mental responsibility of the criminals have found, much to their amazement, that they were perfectly responsible for their acts, conscious of their wrong doing, and sane in their conduct.

Dr. Bisch further finds that there is an inducement to commit crimes due to the prevalence of inadequate punishment. These men whose minds are bent on the criminal side of life regard prison terms as a species of vacation and expect to shorten their confinement by good conduct. Now that the question of the parole board and the pardon board has excited so much attention, it has been noticed that the number of applications for paroles and pardons have been much reduced, probably until the interest or the excitement of the public wears out. Then the parole board and the pardon board will function again in their usual sympathetic manner.

It has been observed, too, that in the management of institutions the criminal who shows good conduct in jail does not keep up the good work while he is out. His bent is such that he cannot, will not, or does not wish to keep out of the excitement of his criminal life. Many of these

criminals are punished, and sometimes the punishment is an individual one, due to circumstances that might in some way admit of leniency. But in a general way, and notably by the crime commission of this state, an effort is being made to tighten up the laws relative to punishment of the criminal in order to make it a real thing and not a matter of a few weeks or a few months detention in work-house or jail. How that will succeed depends entirely on the legislature. There will be the same amount of sentimental sobbing interest in the criminal by certain types of people, and in the end they may win and have their way, because it is commonly known that legislators are more or less easily influenced by men or women who are sympathetically or emotionally inclined.

Dr. Bisch concludes his article in this way, that criminals are like children in a way; that they must be punished effectively, given a fair and reasonable opportunity, but that the punishment must be deliberate, swift and sure, just as one punishes a child for its misdeeds. They must understand it is done for a purpose, they must understand its administration, and eventually, perhaps, they may reason it out for themselves that it pays better to be good than to be bad. He further concludes:

"Crooks should be punished, must be punished. They must be punished with understanding. They must be punished swiftly, surely, unflinchingly. We cannot expect the same moral conduct from all persons, and we cannot expect that any rule-of-thumb method or any single formula will stop the spread of criminality or reform those already criminal.

"Nevertheless, the time is at hand when society must rouse itself for its own self-protection. We must recognize the criminal for what he is. Criminals must be taught, and it must be proved that it does not pay to be dishonest. That's your job, and it's mine!"

This again brings us to the question of the insanity plea on the part of the criminal, and it seems that the only safe way to protect the public, as well as the criminal, is to make the system one which is put in the hands of just and reliable men, to make their examinations before a trial if necessary, or put it under the department of mental diseases maintained by the State so that the question of the mental responsibility of persons can be made more accurate and definite. In Massachusetts the examinations are made by a neutral, unbiased agency and by experts trained and experienced in mental medicine. They make their examinations before the trial and before it

is decided whether or not to resort to the defense of insanity. This, of course, might cause a little hardship on the so-called paid alienist in that his business might suffer, but it saves expense, prevents delay, and aids the course of justice. Society is therefore protected, respect for the law is increased and maintained, and the jury are relieved of a great deal of responsibility.

WOULD YOU LIKE TO BE WORTH A MILLION?

A new book recently published by Harper Brothers and written by Albert W. Atwood is called "The Mind of a Millionaire." And from the way it is written and from the information it contains it ought to be a very popular and well-read volume. He tells a good deal of what millionaires think about, a great deal more about how a millionaire behaves, what he does with his money, and how he gets it, how he distributes it or holds on to it,—hence it is full of anecdote and always interesting. The reviewer, Harry Hanson, says that when you have finished reading it you get the impression that heavy, heavy lies the head of a man who owns a million. You begin to pity him; you begin to wish you could take some of the load off his shoulders. How I would like to be one of the first! Of course, men of great wealth are often misrepresented in these states, just as all doctors and their incomes are often misrepresented, simply because if a man keeps a horse and buggy or drives an automobile he is looked upon as rich, when, as a matter of fact, he may wonder where his next rent is coming from and how he is going to pay his bills. And it is so, sometimes, with a millionaire. He is rich, he has a good deal of money, but he has much less, as a rule, than he is given credit for. He even does not deny that he has a lot of money. He rather prefers to let it be known that he is wealthy. But when he dies and his will is probated, his estate estimated, and the taxes are collected, the figures present an entirely different aspect.

Many of these rich men are envied, and many of the men in Wall Street shake their heads sadly and admit that many of their rich clients know no peace of mind, especially when they get on the bullish side of a bear market.

After all, what is there a rich man has that the rest of us do not have? He can eat no more than the rest of us can without getting into trouble with his gastro-intestinal tract. He can't sleep any more than we do, and often he sleeps less. His head is sheltered by a roof, just as

ours is, but he could afford shingles with amethyst in them if he wanted to. He has a dozen motors and a dozen chauffeurs and then, for a bit of pure enjoyment, he takes a spin all by himself in a roadster. As for clothes, the rich man can wear only one suit at a time. Think of all the matters that annoy the rich,—the taxes and surtaxes without end. The cost of living hits the rich man much harder than anyone else; he must carry the burden of charities inherited from his father or be demeaned socially, or else be a piker and a miser. Everyone whom he has asked for a favor will come back at him with ten times his importunity. He must entertain whether he wants to or not, and it must be a terrible grind to have to entertain a great deal and meet the same kind of people who talk the same kind of talk. Then, too, all of his indigent relations eat off of him; innumerable friends must be provided for; he must contribute largely to various drives for funds, colleges, and other local contributions for many kinds of worthy or unworthy causes. Mr. Atwood relates in his book that one motion-picture actress gets so many letters that it costs her \$28,000 a year for secretaries, photographs, and postage.

Now, Mr. Reader, you and I know that we could each of us live on that amount of money comfortably and easily. We all know, too, that a king gets only his board and clothes. He may have to entertain on the side or he may have to do a lot of things he wishes he did not have to do, but he must do them because his position demands it. Of course, many rich business men like the game purely for the game's excitement, but they think of nothing else. Their life is making money, and they allow their secretaries to direct the distribution of the larger part of it. John D. Rockefeller, Jr., believes that no good can come from direct gifts to the poor, but believes that poverty has to be routed by a flank attack, by the eradication of preventable diseases and conditions that make disease, and by enlarging opportunities for work. Mr. Atwood further intimates that many of the rich people who have fine country-estates are not necessarily indulging in wasteful luxury; likely as not they are producing work and beauty. Of course, among all these people that are discussed there are misers and wasters. Sometimes rich people have too much and sometimes they have too little, and the author tells the story of the Chicago millionaire who was sued for \$1,332.00 by a haberdasher for 111 pairs of socks; and he tells the pitiful tale of how the valet of Charles Schwab lost that man's only collar button! Truly, wealth is a ter-

rible load and those who have it must be resigned to their fate and determined to bear up bravely! Just think what we doctors could do if each of us had a million! That, however, is not the idea of the editor—to have a million. He set his goal at fourteen million; might just as well set it at fourteen or at one or one hundred and forty million. He has thought out how much good he could do by endowing hospitals, art institutes, orchestras, new buildings, and, best of all, how he could relieve the distress that is constantly hanging over the heads of the indigent; how he could put them on a definite amount of money each year, not a large sum but just enough to make them comfortable, thus keeping away the fear of poverty. He has many friends that he would like to see prosper more than they do now.

But what is the use of dreaming on. Most of us will work and continue to work on the supposition that we are going to die with our boots on, just for the beauty of living, of doing good as best we can without a million, and hoping that in the end we will have a reward for service,—a feeling that we have accomplished a definite purpose in life and have benefited mankind to the best of our ability.

But, Oh Lord, I wish I had a million!

NEWS ITEMS

Dr. C. E. Duncan has moved from Roslyn, S. D., to Arthur, N. D.

Dr. J. S. Whitson has moved from Enderlin, N. D., to Hannaford, N. D.

Dr. Frank C. Fitzell has moved from Jamestown, N. D., to Iowa City, Iowa.

The Bowbells Hospital, of Bowbells, N. D., has been re-opened by Mrs. J. R. Jensen.

Drs. R. M. O'Rourke and W. H. C. White have taken charge of the Travers-Myers Hospital at Ely.

Dr. R. R. Cranmer, of Minneapolis, has gone to Europe for a brief trip, and will return this month.

Dr. W. E. G. Lancaster, who sold his practice in Abercrombie, N. D., several months ago, has located in Fargo, N. D.

Dr. O. O. Larsen, of Detroit, is to move to Fergus Falls to become associated with Dr. T. N. Kittleson of that city.

The contract for a \$100,000 addition to the Willmar (Minn.) Hospital has been let to a Minneapolis firm of contractors.

Dr. George Schott, who died at the age of 68 in Sioux City, Iowa, last month, formerly practiced in Vermilion, S. D., in the early 80's.

A special election is to be held this week by Scott County (Minn.) on the subject of erecting a county hospital not to exceed in cost \$25,000.

Dr. B. W. Black, of the Veterans' Bureau, of Salt Lake City, Utah, has been appointed medical director of the Veterans' Bureau at Sioux Falls, S. D.

Rapid City, S. D., is to have a second hospital which the Catholic Sisters of Sturgis have decided to open soon and later erect a hospital building.

Dr. Ivar Sivertsen, of Minneapolis, refused to accept an appointment to serve on the City Board of Public Welfare tendered by the Mayor last month.

Dr. Ralph E. Pray, a recent graduate of the University of Pennsylvania, has become associated in practice with his father, Dr. E. O. Pray, Valley City, N. D.

The Miles City (Montana) Clinic is constructing a clinic building that will cost about \$75,000. It will be thoroughly equipped with apparatus for all medical and surgical work.

Dr. R. R. Heim and wife, of Minneapolis, have returned from a trip of six months in Europe. Dr. Heim spent three months in study in Vienna, and three months in travel about Europe.

Dr. L. M. Keene, who was located at one time at Alexandria, Minn., and also at Mellette, S. D., has moved to Winthrop, Minn., to take up the practice of Dr. A. E. Vik, who moved to Minneapolis.

Dr. A. T. Baker, of the Eitel Hospital, Minneapolis, has just returned from a two months' trip to the hospitals of Europe. He was accompanied by his wife, and they spent some time in sight-seeing through Europe.

Dr. J. H. Holt was married on June 28 at Chappaqua, N. Y., to Miss Mary W. Suddaby, of Ottawa, Canada. Dr. Holt is a recent graduate of the Medical College of the University of Minnesota. He will begin practice in St. Paul on October 1.

Dr. Torvald Vaaler, of Brooten, and Dr. A. R. Ellingson, of Bertha, have purchased the Detroit Hospital which Dr. Larsen has conducted for several years in that city. Drs. Ellingson and Vaaler are 1924 graduates of the Medical School of the University of Minnesota.

Dr. F. J. Morris, of Prior Lake, has given up practice at that place after three years of successful work, and will locate in Los Angeles, Calif. He will be succeeded in Prior Lake by Dr. J. T. Delougherty, of South St. Paul, a 1924 graduate of the Medical School of the University of Minnesota.

Dr. Oscar T. Peterson, of Minot, N. D., died last month at the age of 60. Dr. Peterson was a graduate of the College of Medicine of the University of Illinois, class of '95, and began the practice of medicine at Gibbon, Minn., and then went to Northwood, N. D., and about three years ago he moved to Minot, N. D., where he practiced till the time of his death.

Dr. True P. Gottschalk, of Sioux Falls, S. D., died on June 17 at the age of 33. Dr. Gottschalk was a graduate of the Medical School of the University of Indiana, class of '23. He spent a year in Government work in Panama and two years in the World War. At the time of his death he was associated with the Moe Hospital in Sioux Falls as assistant surgeon.

Dr. William A. Germain, of Sioux Falls, S. D., died last month at the age of 71. Dr. Germain graduated at the Medical College of Indiana in the class of '82, and at once located in Sioux Falls, where he practiced until his death. He was a successful practitioner, and in later years he found much time to travel, going once around the world and making other extended trips at home and abroad.

The ninety-seven physicians who made up the party on the second annual European tour of the Inter-State Post-Graduate Clinic Assembly have returned, and they report a delightful and profitable trip. The Minnesota physicians in the party were Dr. Stella L. Wilkinson, Duluth; Dr. L. B. Wilson, Rochester; Dr. Alex Stewart, St. Paul; Dr. August Kuhlman, Melrose; and Drs. O. A. Olson and W. W. Moir, Minneapolis.

On July 2d The Upper Mississippi Medical Society met at Bemidji. A paper was presented by Dr. C. B. Drake, of St. Paul, on "Diabetes." Dr. A. W. Ide, of the N. P. B. A. Hospital, gave a paper on "Infections," and Dr. Paul W. Giessler, of Minneapolis, showed lantern slides illustrating various orthopedic conditions and their treatment. A dinner and dance was given after the meeting at the Birchmont Beach Hotel.

Dr. Alvah J. Stowe, of Rush City, has retired from practice, and has sold his practice in Rush City to Dr. R. F. Hultcrans, a recent graduate of the Medical School of the University of

Minnesota. Dr. Stowe retires at the age of 65 on account of impaired health. He began practice in Minnesota nearly forty years ago, and with the exception of a few years in Minneapolis his practice has been in Rush City, where he leaves a large circle of friends.

The Wabasha County Medical Society held its forty-eighth annual meeting at Wabasha last month. Papers were presented by Dr. D. S. Fleischhauer, of Wabasha; Drs. W. P. Larson and Woodward Colby, of Minneapolis, Dr. J. T. Christison, of St. Paul; and Dr. G. McL. Waldie, of Wabasha. Officers were elected as follows: President, Dr. J. S. Collins, Wabasha; vice-president, Dr. L. F. Sutton, Mazeppa; secretary-treasurer, Dr. W. F. Wilson, Lake City; delegate, Dr. W. F. Wilson.

Christian Peter Lommen, Dean of the College of Medicine of the University of South Dakota, died last month at the age of 61. Dean Lommen was a graduate of the Academic Department of the University of Minnesota, class of '91, specializing in biology. He organized the College of Medicine of the University of South Dakota and founded the State Health Laboratory. He studied in Europe and did much research work in America, especially in the Marine Laboratory at Wood's Hole, Mass., where many distinguished scientists have worked and where Dean Lyon, of the Medical School of the University of Minnesota, has been working this summer.

The following physicians were licensed to practice in North Dakota at the July meeting of the Board of Medical Examiners: Dr. J. Preston Bye, Grand Rapids, Minn.; Dr. Ralph E. Leigh, Grand Forks, N. D.; Dr. A. L. MacNeil, Cabri, Sask.; Dr. G. G. Thorgrimson, Grand Forks, N. D.; Dr. Jerome E. Scanlan, Edgeley, N. D.; Dr. W. J. McIvor, Petersburg, N. D.; Dr. C. J. Houston, Williston, N. D.; Dr. Paul W. Freise, New Salem, N. D.; Dr. J. J. Ahlfs, Bismarck, N. D.; Dr. J. P. Craven, Williston, N. D.; Dr. W. R. Winn, Jamestown, N. D.; Dr. H. C. Anderson, Bismarck, N. D.; Dr. O. H. Perry, Eglund, N. D.; Dr. J. B. Gumper, Belfield, N. D.; Dr. N. O. Delager, Carpio, N. D.; and Dr. H. M. Banks, University of North Dakota.

On a beautiful afternoon in the middle of July the people of Detroit, Minnesota, gathered in their public park to hold a basket picnic for some unknown reason until it was announced that the purpose of the gathering was to welcome back to his work, after a long rest because of sickness, their honored fellow-citizen, Dr. Leonard C.

Weeks, who had served them continuously for thirty years. The Mayor of the city, the editor of the *Detroit Record*, other leading citizens, and fellow-practitioners, and physicians spending an outing in the city, spoke appreciatively of the doctor and his work. In closing a beautiful watch was presented by the Mayor in the name of "Detroit Friends." We make editorial notice of the occasion on another page.

A New Medical Society

"The Minnesota Society of Internal Medicine" was organized on June 11, 1926, at a meeting held at The St. Paul Town and Country Club, the charter members consisting of physicians from Minneapolis, St. Paul, Duluth, and Rochester.

The purpose of the Society is "to promote among its members good fellowship, cultivate a distinct type of special practice in medicine, encourage medical education of a high order, and stimulate research."

The first officers are Dr. Charles Lyman Greene, president; Dr. George Douglas Head, vice-president; and Dr. Edwin L. Gardner, secretary-treasurer.

The first scientific meeting was called for Rochester early in November, 1926.

E. L. GARDNER, M.D.

Midsummer Meeting of the Twelfth District Medical (S. D.) Society

The mid-summer meeting of the Twelfth District Medical Society of South Dakota was held at Enemy Swim Lake on July 10. This being the mid-summer meeting, the Aberdeen and Watertown Districts were invited to attend. The meeting was fairly well attended, and the following program was given:

A paper was given by Dr. J. D. Alway, of Aberdeen, entitled "Common Diseases of the Eye" and one by Dr. Lowthian, of Milbank, entitled "Pre- and Post-Menopausal Hemorrhage." The next paper was by Dr. W. A. Jones, of Minneapolis, who in his versatile manner gave us a wonderful lecture on "Common Nervous Affections," which held the attention of the audience to the last word.

Those members who failed to take advantage of this meeting certainly are the losers, as the matter presented was of vital importance to the medical practitioner.

J. F. D. COOK, M.D.

Annual Meeting of the Montana State Medical Association, Billings, Montana, July 16 and 17

Bright, interesting, and helpful papers, some with lantern slides, distinguished the program of this meeting, on contrast to the new or dry-clinic style of program.

Nine of the seventeen papers presented were given by Montana men, and were indeed excellent papers. The guests of the Association from outside the State were the following, in the order in which their names appear on the program: Drs. Fred Adair and F. C. Rodda, Minneapolis (University of Minnesota); Dr. Morris Fishbein, Chicago (Editor of the *Journal of the A. M. A.*); Dr. L. Webster Fox, Philadelphia, Pa. (Professor of Ophthalmology, Jefferson Medical College); Dr. W. J. Mayo, Rochester, (Mayo Clinic); Dr. R. C. Coffey, Portland, Oregon;

Dr. Henry Schmitz, Chicago, Ill.; Dr. H. U. Des Jardines, Rochester, Minn. (Mayo Clinic).

Officers for the current year were elected as follows: President, Dr. Fred F. Attix, Lewiston; president-elect, Dr. George M. Jennings, Missoula; vice-president, Dr. S. K. Campbell, Harlowtown; secretary-treasurer, Dr. E. G. Balsam, Billings. Dr. J. A. Evert, of Glendive, was elected Councilor to succeed Dr. R. H. Beach, of Glendive, who has moved to Tacoma, Wash.

The next meeting will be held in July, 1927, at Missoula.

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By an experienced physician licensed in Minnesota and North Dakota. Address 172, care of this office.

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Good location for physician and dentist over new drug-store in desirable part of Minneapolis. Address 179, care of this office.

Minneapolis Office in Fine Location for Rent

Dentist on north side wants a physician to join him in rental of office in a new building. No physician within several blocks. Call Hyland 0262.

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Practice and office fixtures and furniture in an excellent location in Minneapolis, on the south side, are offered for \$350. Address 177, care of this office.

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Practically new. Used for not more than 50 treatments. Cost \$375.00. Will sell for \$275.00, f. o. b. at my town in South Dakota. Address 187, care of this office.

Electric Sterilizer Wanted

I desire to buy a second-hand electric sterilizer for office use (alternating current). State particulars: size, make, price, how long used, etc. Address 174, care of this office.

Laboratory Technician Wants Substitute Work

Experienced laboratory technician, and can do physiotherapy. Best of references. Will work for one or two weeks or through the summer. Address 183, care of this office.

Office for Rent

Wanted—A physician to share reception offices with dentist, old established, finest offices in the city, second floor of Hulet Bldg., Seventh St. and Hennepin Ave., Minneapolis. Rent reasonable.

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One Burdick Deep Therapy Lamp, used very little, for one-third original cost; one Betz army-style operating-table, never used, for half original cost. Address Dr. F. A. Northrup, Pierre, S. D.

New Connection Desired

A 1923 graduate of a first-class medical school desires to become associated with a high-class man (or clinic) whose major practice is surgery and has hospital connections. Best of references as to attainments, character, and personality furnished. Licensed in Minnesota. Address 186, care of this office.

Drug Store for Sale—Unusual Offer

Clean stock of merchandise and soda fountain. Own building with living apartments on second floor. Location in good town of 400 in South Dakota, and large territory to draw from. No competition. Business is good. Priced to be attractive. Don't pass this rare bargain. Address 176, care of this office.

Clinic for Sale

A clinic in a hustling city in Northern Minnesota County seat. Offices very completely equipped with X-ray, Diathermy, Alpine-Sun lamp, incubator, gas outfit, tables, etc. Also two-fifth interest in modern 25-bed private hospital. Railroad and insurance appointments. This takes two or three men. Price \$10,000. Address 182, care of this office.

Office Position Wanted

An efficient and dependable young woman stenographer, with four years of experience in medical work in a clinic, desires a position in a doctor's office or clinic in the Twin Cities. Am thoroughly conversant with history-taking, medical corporation work and general office detail. A-1 references furnished upon request. Address 185, care of this office.

Wanted

A reliable physician to buy an unopposed practice in a centrally located town of North Dakota. Good schools, churches, water, sewerage, electrically lighted. House completely furnished. Full equipment as it stands. Nearest physicians 30 miles in all directions. Cash practice in 1925 was \$14,000. \$2,000 to cover furniture and equipment to close deal. Terms to suit party. Address 181, care of this office.

Practice for Sale

A very lucrative unopposed general and surgical practice in a live modern town of 600 in eastern South Dakota. Mixed population. Excellent schools, good roads, good territory, no crop failures, well settled. This is an opportunity to make money from the start. Terms to suit purchaser. No real estate. Address 189, care of this office.

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There is a splendid location in a fast-growing section with no competition at 2300 West 50th St. Steam-heated modern offices at reasonable rent. End of the Oak and Harriet carline in fine new section of city. Inquire at above location or telephone Walnut 2413 (Christianson Drug Co.) or Hyland 3129 (owner of property).

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PHYSICIANS LICENSED AT THE APRIL (1926) EXAMINATION TO PRACTICE IN
MINNESOTA**

BY EXAMINATION		
Name	School and Date of Graduation	Address
Berglund, Hilding	Karolingian Med. & Surgical Inst., Sweden, 1916	University of Minnesota, Minneapolis
Biersborn, Byron Maxwell	U. of Minn., M.B., 1925	University Hospital, Minneapolis
Birkeland, Ivar Wessel	Royal Fredk. U. of Oslo, Norway, 1924	Scenic, Wash.
Bloomberg, Clarence Edward	U. of Minn., M.B., 1926	329 Union S. E., Minneapolis
Bodine, Marc Williams	U. of Penn., M.D., 1924	Rochester, Minn.
Branley, Bernard Lincoln	U. of Minn., M.B., 1926	610 W. 32 St., Minneapolis
Brown, Felix Manning, Jr.	Vanderbilt, M.D., 1924	Rochester, Minn.
Cervenka, Chas. Francis	U. of Minn., M.B., 1926	603 E. River Rd., Minneapolis
Clark, Daniel Maurice	U. of Minn., M.B., 1926	St. Mary's Hospital, Duluth, Minn.
Dordal, John	U. of Minn., M.B., 1925	605 Erie S. E., Minneapolis
Felland, Oscar M.	U. of Minn., M.B., 1926	Minneapolis General Hospital
Green, Geo. Francis	U. of Mich., M.D., 1924	Rochester, Minn.
Heiam, Wm. Conrad	U. of Minn., M.B., 1926	329 Union S. E., Minneapolis
King, Jos. Thos.	U. of Minn., M.D., 1925	510 Ontario S. E., Minneapolis
Loney, Wm. R. R.	U. of Minn., M.B., 1925	3800 Portland, Minneapolis
Malmgren, Geo. E.	U. of Minn., M.B., 1926	254 Maria, St. Paul, Minn.
Netz, Lester W.	U. of Minn., M.B., 1926	4309 Colfax, Minneapolis
Peterson, Herbert Wm.	U. of Ill., Cert. Med., 1925	1514 E. 18th St., Minneapolis
Pollard, Donald W.	U. of Minn., M.B., 1926	Minneapolis General Hospital
Rowles, Everett H.	U. of Minn., M.D., 1926	Swedish Hospital, Minneapolis
Shugrue, John Joseph	Georgetown, M.D., 1919	Rochester, Minn.
Stein, Raymond James	U. of Minn., M.B., 1926	Holdingford, Minn.
Stephens, Brooks Palmer	U. of Kansas, M.D., 1921	Rochester, Minn.
Vandersluis, Harold H.	U. of Minn., M.B., 1926	Fergus Falls, Minn.
Venables, Alex. Evan	U. of Manitoba, M.D., 1917	1339 Sargent, St. Paul, Minn.
Waller, Riley Moore	Washington U., Mo., M.D., 1920	Rochester, Minn.
Weinauer, Heribert Friedrich	U. of Munich, 1925	Binghamton, N. Y.
Werner, Robert Frederic	U. of Minn., M.B., 1926	629 Washington S. E., Minneapolis
Westby, Magnus	U. of Minn., M.B., 1926	329 Union S. E., Minneapolis
Wilken, Paul Arthur	U. of Minn., M.B., 1926	3912 Pleasant, Minneapolis
Yaeger, Wilbert Wm.	U. of Minn., M.B., 1926	Sanborn, Minn.

BY RECIPROCITY		
Alvarez, Walter Clement	Cooper Med. Coll., Cal., M.D., 1905	Rochester, Minn.
Gehlen, Jos. Nicholas	Creighton, M.D., 1918	Lowry Building, St. Paul, Minn.
Grogan, John Sebastian	Northwestern, M.D., 1914	Wadena, Minn.
Havens, Fred Z.	Rush, M.D., 1915	Rochester, Minn.
Jordan, Elverse Morris	U. of Texas, M.D., 1923	Rochester, Minn.
Kjelland, Andrew A.	U. of Minn., M.D., 1910	Hatton, N. D.
Leitch, Neil McLean	U. of Illinois, M.D., 1925	Rochester, Minn.
Ready, Frank Lane	U. of Nebraska, M.D., 1925	727 E. 18th St., Minneapolis
Ritter, John Franklin	U. of Mich., M.D., 1895	Maquoketa, Ia.

LICENSED ON NATIONAL BOARD CERTIFICATE

Barker, Nelson Waite	Rush, M.D., 1925	Rochester, Minn.
Iler, Russell Hills	Cornell, M.D., 1924	Rochester, Minn.
Kappes, Louise Osborn	U. of Mich., M.D., 1924	Rochester, Minn.
Nomland, Ruben	Rush, M.D., 1925	Rochester, Minn.
Rentschler, Calvin B.	U. of Penn., M.D., 1924	Rochester, Minn.
Rentschler, Edwin B.	U. of Penn., M.D., 1924	Rochester, Minn.
Dean, Arthur Clark	Jefferson, M.D., 1917	Crookston, Minn.

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SOME PHASES OF ABDOMINAL AND PELVIC SURGERY WITH REPORT OF CASES*

By MONROE M. GHENT, M.D.

Attending Gynecologist at Ancker Hospital

ST. PAUL, MINNESOTA

Every physician is practicing surgery in some form. The nerve specialist who does a lumbar puncture or the internist who uses a needle to draw off a pericardial effusion is doing surgery of a rather high order. The simple painting of iodine on a scratch is surgery that has saved many lives. Surgery is now so well standardized that the practice of it is becoming easier every year. Eighty-five per cent of diseases are treated surgically, according to Harvey Cushing. For a long time I have been wondering if surgical cases are more interesting than other cases or do they just seem more interesting. (See Figs. 1 and 2.)

The first case I want to report is one of chronic ulcerative colitis. This girl was fourteen years old when she first came under our care. Up until twelve years of age, the patient had been a very strong, healthy girl, rather of the masculine type. She had had an obsession for eating the lead in pencils since childhood. For two years she had been passing blood and mucus in the stools, gradually growing worse. She was examined by a very careful physician, but the disease was probably not advanced far enough to make a diagnosis. Along with the bloody stools there was more or less diarrhea. As these symptoms grew worse she had more pain. Her general health was not impaired until we took out a

gangrenous appendix. At the time the appendix was removed I did not know it was an extension of the process from the colon. I can find the report of no case of ulcerative colitis where the appendix was involved in the process. From the time her appendix was operated on she lost rapidly. She had a high leucocyte count with some fever every evening. A Roentgen-ray of the colon made the diagnosis. The picture showed a greatly narrowed, moth-eaten, scarred, distorted colon, worse in the lower portion, growing more normal as the process extended upward toward the cecum. By this time she was having from fifteen to twenty bloody stools a day with a large amount of pus in the stools. After trying high colonic irrigations for a few days with no results we did a cecostomy under local anesthesia using a large rubber tube. Through this tube we irrigated the colon twice a day with various solutions but mostly boric acid. She grew gradually weaker, the fever going up as high as 103° in the afternoon, and she finally died from exhaustion. Postmortem examination showed only an ulceration of the mucous membrane of the colon with a tendency to recovery. There were large irregular areas in the colon that contained no mucous membrane at all. The muscularis mucosae was not disturbed, and this explains why these cases never perforate and have a tendency to heal. From the fever, the high leucocytosis, and

*Presented before the Ramsey County Medical Society, March, 1926.

the marked anemia (hemoglobin 15 per cent) I had thought we might find an abscess in the liver or somewhere in the abdomen, but there was no tendency to abscess formation anywhere.

Bargen and Logan, in the *Archives of Internal Medicine* for December, 1925, publish a report where they have isolated a diplococcus from the ulcers of chronic ulcerative colitis in 80 per cent of the cases. They now cure cases of chronic mucous colitis by removing distant foci of infection and immunization along with topical applications and irrigations.

The next case is that of a young man, twenty-four years of age. He had been ill for three weeks before he came under our care. For

On examination the abdomen was hard and distended. We were unable to make a diagnosis before operation, but we thought we were dealing with a peritonitis, probably due to a ruptured appendix. As soon as the abdomen was opened, a large amount of a clear, straw-colored fluid gushed out of the wound, probably as much as two gallons. Then we considered a tuberculous peritonitis. First we looked at the appendix and took it out. It was acutely inflamed but evidently not the seat of the trouble. Then we looked all over the abdomen for tuberculosis or for any malignant growth. Everything was negative. We closed the abdomen without drainage. The fluid from the abdomen proved negative to



Fig. 1. Normal colon.



Fig. 2. Chronic ulcerative colitis.

thirty-six hours before he entered the hospital he had been vomiting incessantly. His abdomen was very much distended with a history of passing no gas or feces for the past thirty-six hours. Temperature from normal up to 100°, with pulse fast and very weak. He was in shock. For years he had been taking soda, off and on, for indigestion, so we first considered a ruptured gastric or duodenal ulcer. This we ruled out by further examination and observation. He had been complaining of pain in the upper left quadrant of the abdomen for about a week. At this time he was passing bloody urine. One physician that saw him diagnosed a left-sided renal colic. His leucocyte count was over twenty thousand.

culture and examination. Three days after operation he began to have pain on the lower left side of his chest. Next day there was a rub there and on the following day he developed pleurisy on the right side. In three or four days he had developed a pleurisy with effusion on both sides. About one quart of a clear, straw-colored fluid was removed from each side. This fluid was also negative to culture. Now, to go back over the case: This man had been exposed to the cold and wet, doing work which he was not accustomed to doing. He became very fatigued. With this he developed an acute tonsillitis. In a few days he noticed he was passing nearly pure blood from his kidneys. The enor-

mous ascites was due to the diaphragmatic pleurisy causing a localized peritonitis with a large ascites. Taking these symptoms as they developed, fatigue, tonsillitis, diaphragmatic pleurisy pains, hematuria, ascites, and later, a double effusion of the pleura, it is easy to see that we were dealing with an acute multiple or polyserositis and an acute hemorrhagic nephritis. The germ was most likely a hemolytic streptococcus. Recovery was uneventful, but he never felt well till after his tonsils were removed some months later.

The next case was a boy, eleven years old. When I first saw him I diagnosed a ruptured appendix, from the tenderness and rigidity in the lower right abdomen, leucocytosis, fever, and vomiting. He had passed no gas or feces in the last twenty-four hours. At operation, the appendix was acutely inflamed, but it was evidently not the cause of the trouble. By the time I had removed the appendix I had decided to make another incision over the pylorus. We did this and found a ruptured gall-bladder, filled with stones. Some of the stones had escaped into the abdominal cavity. The opening in the gall-bladder was enlarged, the stones quickly removed, the gall-bladder drained, also the region around the gall-bladder, and the wound closed. Some authorities would claim this gall-bladder should have been removed, but I cannot subscribe to this procedure. "Get in and get out" is the best motto. He made a prompt recovery. The boy had had typhoid fever the year before.

It is my opinion that there is a direct relationship between cases of infantile paralysis and tuberculosis of the intestines. The following case will illustrate what I want to prove.

A girl, ten years old, had had infantile paralysis six years ago. There was a history of repeated attacks of pain over McBurney's point. On examining the abdomen we could feel a mass roll under our fingers in the region of the appendix. The next day we opened the abdomen but could find no mass as we had felt the day before and very little trouble with the appendix, which was removed. In a few months she began to have the same kind of spells that she had had before operation. This meant we had not found the trouble at our first operation. About one year later she was brought to the hospital in a very grave condition. There was a mass in the lower right quadrant as large as a child's head. She had been vomiting for two or three days. She had a temperature of 102° with a rapid, weak pulse, passing no gas or feces. We made a diagnosis of an intestinal obstruction and did a colostomy on the left side. The mass on the right side we drained, which contained a large amount of pus. She soon began to improve but the fever and diarrhea kept up all the time. In three months we went in to close the colostomy and found the entire abdomen studded with tuberculous

areas. She lived only two or three days after this. I have had three other cases of infantile paralysis showing tuberculosis of the intestines. Appendicitis is also more common after infantile paralysis than in other people.

In one year we had three cases where we diagnosed intussusception in children. From the history the first case had been intussuscepted for not over twenty hours. At operation the diagnosis was found correct, but in the mesentery of the adjacent intestines were twelve or fifteen glands varying in size from a pea to a filbert. The glands were as hard as cartilage, almost. In the next case of intussusception we found the same thing. In the third case we made a diagnosis of intussusception, but at operation the obstruction was due to enlarged glands in the mesentery of the ileum. It proved later to be a "flu" condition. The child developed bronchopneumonia and died five days after operation. I posted the case and found the enlarged glands had returned to almost normal. They were removed and submitted to microscopic examination, and it was found to be only a round-cell infiltration. I submitted these case reports to Prof. Hektoen, and he said he thought glands could develop in a few hours with these characteristics. In intestinal influenza I think we should consider the possibility of an obstruction due to these glands.

One of the most interesting chapters in abdominal surgery and one I think that is not well understood is the one written about the cecum. Lane was one of the first to study the ileocecal region. Wilms, Waugh, Gray, and others have described the symptoms that are associated with a mobile cecum. Waugh describes five types of mobile cecum. They are the gastric and duodenal ulcer, renal and biliary colic, and right iliac fossal type. He says when he operates for these five conditions and finds them negative and then finds a mobile cecum he gets good results by immobilizing the cecum.

The removal of an innocent appendix for pain and discomfort in the lower right quadrant has probably done more harm to abdominal surgery than any other one thing. Waugh (*The British Journal of Surgery*) has published a report of one hundred and eighty operations on a mobile cecum that is very convincing. During the early fetal life the cecum and ascending colon are up under the right costal arch. The descent to the right lower quadrant may be promoted or retarded by the mesentery, and, if the cecum does not descend to its normal position at the proper time, other organs may occupy the place the cecum should have normally, thus explaining a

misplaced cecum or appendix which is not so uncommon. In looking for an appendix or even the cecum we must bear in mind that they may still remain up under the liver. In this case the appendix is generally retrocecal. This will also explain why the ileum does not always enter the cecum in the normal way. The ileum may enter the cecum from the posterior portion, instead of the side.

The bands that form a Lane's "kink" or a Jackson's membrane are derived from the right margin of the omentum according to different authorities (Gray, Jackson, and Waugh), as well as our own observation. Just recently we operated upon a case for gall-stones, but in taking

the ascending colon should be sutured to the posterior parietal peritoneum, according to Waugh. In the history of the mobile cecum cases the symptoms are not quite typical for the things they simulate, which should make us suspicious.

According to Waugh, in operating for a mobile cecum he delivers the cecum on to the abdominal wall through a long right-rectus incision and then cuts the posterior parietal peritoneum and the fascia just beyond where the vessels of the mesentery run to the ascending colon. Turn this back for an area the size of the ascending colon and then suture the free margin of the peritoneum and fascia to the anterior surface of the ascending colon. This will immobilize the colon



Fig. 3. Jackson's membrane. From Year Book of Surgery, 1925.



Fig. 4. Jackson's membrane. From Year Book of Surgery, 1925.

out the appendix first, which we do if the appendix is diseased, we found a tongue-shaped portion of the omentum grown across the cecum to the posterior parietal peritoneum. Now this was a Jackson's membrane where the omentum fused distinctly with the parietal peritoneum. A Jackson's membrane can often be traced to the omentum. The Jackson's membrane and Lane's "kink" shorten the mesentery, while a mobile cecum has too long a mesentery. In my experience the obstructive form is much more common, but probably I have not been looking for the mobile form closely enough. In the obstructive form the bands should be cut, in the mobile form

and, according to his and other reports, will cure these symptoms.

Pregnancy benefits these cases, showing what support will do for a mobile cecum. It is an easy matter to see how it would be hard for the peristalsis to move a semisolid mass up hill through a mobile or obstructed ascending colon.

Bands, which I feel should never be called adhesions, may be found at the hepatic or splenic flexure of the colon and on the sigmoid. Recently we treated a patient, female, thirty-five years old, who showed symptoms of a pelvic abscess on the left side. She had fever, leucocyto-

sis, 22,000, and vomiting and was very tender over the left pelvic region. The clinical diagnosis was a left pelvic abscess. She improved under rest in bed and was operated on later by Dr. E. M. Jones. At operation Dr. Jones found nothing wrong except a broad band across the sigmoid. This band was severed, and the patient was relieved.

Harbin says that 80 per cent of the acute abdomens are due to the appendix and that 60 per cent of deaths from this condition are due, directly or indirectly, to the appendix. The Year-Book of Surgery for 1925 observes that the death rate from appendicitis is increasing, and it claims that we need some man like J. B. Murphy to awaken us to greater efforts. C. H. Mayo agrees that the death rate is increasing, but he says it is because we have quit discussing appendicitis in our meetings. I agree with the latter view. John B. Deaver says that when a patient complains of a pain in the abdomen the first organ to think of is the appendix.

When shall we operate on an acute appendix? As soon as the diagnosis is made. The principle of Ochsner's "wait and starvation" treatment after the first thirty-six hours has led to a lot of misunderstanding and confusion. The following case will illustrate my contention. A young man, twenty-five years old, had been ill for three days with appendicitis. He had seen no physician. Examination showed a board-like rigidity in the right lower quadrant. He had been vomiting for the last twenty-four hours. With a history of former attacks, pain in the right side for three days, muscular rigidity, fever, and a high leucocyte count, I did not hesitate to make a diagnosis of a suppurative appendicitis with localized peritonitis. Under local anesthesia with a little gas we found a gangrenous appendix with some exudate, but no perforation. He made a quick recovery. To have waited in this case would have been a serious mistake, for no one can tell what an inflamed appendix is doing or will do. Unless it be a case that is distinctly improving or one that is moribund, operate at once. It is a mistake to operate on patients that are too far gone, and yet every patient should receive what help there is to be had from surgery when there is any chance left. Just recently I have changed my mind about one other form of appendicitis. In children with a grip or "flu" condition in the lungs where the appendix becomes involved in the process we do not operate. The mortality is nearly 100 per cent in these cases. If we do not operate, the appendix may clear up. If a localized abscess forms we can open that with

very little risk. If a general peritonitis develops an operation will do no good. It would take too long to discuss appendicitis in general, but I would like to say a few words about suppurative cases. If I should ever get a suppurative appendicitis I hope I can get some surgeon to operate on me through a muscle-splitting incision. You say, Well, you cannot explore through such a short incision. That is the very reason why I want that incision, so there can be no exploring. With a perforated appendix, we are not operating to remove the appendix, but to save the patient's life. If you are operating on me do not stop to take the appendix out if it is going to add to the risk. Later, after two or three months, it is easy to take out an appendix that has been drained. Drain the abscess and get out. If the abscess gravitates to the cul-de-sac in women or around the rectum in men or women, then it is a minor operation to open from below. One thing we have to be careful about, the abscess must bulge into the vagina or into the rectum before we attempt to open it. Some of the most humiliating experiences of my life have been in trying to open an abscess from the vagina or rectum when there was no abscess or when it was too high to reach safely from below.

It is impossible for me to diagnose chronic appendicitis. Patients that we see in the office complaining of pain in the region of the appendix without any history of recurrent attacks, with no fever and no increase of leucocytes, are usually cases of Jackson's membrane, a Lane's "kink," a mobile cecum, or a stricture of the right ureter. The appendix may be involved in the membrane, or it may not. In this kind of a case, in women, it is our custom to make a median incision. Everything in the region of the appendix can be corrected through this incision, as well as the pelvic work. Since we have adopted this plan in women we have found more things to correct in the pelvis than we formerly did, consequently we are getting better results.

Infection following confinements or abortions causes more deaths, in our experience, than all other gynecological conditions put together.

Nothing is so pathetic as to see a mother die after confinement. In these cases the prognosis usually depends on the kind of germ. If there is nothing localized and the infection takes the form of a true septicemia we have found nothing that will influence the course of the disease. Young has described the wonderful results he gets from mercurochrome, but we tried it with no beneficial effects at all.

If we are fortunate enough to have a pus-form-

ing germ, then surgery has a chance to save most of the cases. I lost a case of this kind last year due to poor surgical judgment. The patient was a colored woman about twenty-five years old. She had been confined by a midwife eleven weeks before she entered the hospital. After her confinement she had not been able to be out of bed. When we first examined her she had a temperature from normal up to 100.5° with a leucocytosis of about 15,000. She had noticed a mass in the right side, about opposite the umbilicus, as large as a cocoanut. Bimanual examination showed nothing in the vagina. We kept her under observation for a few days, but there was no improvement. We opened the abscess under gas which was mistake No. 1. It should have been done under local anesthesia. When I cut down on the abscess the mass was so hard that I could not believe it was an abscess, so I dissected around it a little, accidentally making an opening into the free peritoneal cavity—mistake No. 2. Then the pus came out with a gush, spreading some into the general peritoneal cavity. That night the temperature rose to 105° . Next day she began coughing and developed a septic lobar pneumonia on the left side. She died five days after the operation. At postmortem we found a general peritonitis and a left lower lobar pneumonia. I gave myself credit for her death.

The next case is one of a female child between one and two years old. Dr. Scott McClanahan called me up and said he was sending in a little girl with a complete prolapse of the bladder. I had never seen the case, but I thought it would be treated just as a prolapse of the rectum. The mother said that the child had had a diarrhea and had been straining at stool. All at once the mother noticed this red round swelling which she thought was the bladder. The bladder was completely outside of the vagina. I washed my hands, and with a little vaseline I reduced the bladder back through an opening in the vagina that would just about admit my fore-finger. This was done without any anesthesia. Then I treated the condition just as I would a prolapsed rectum in a child, by strapping the legs tight together with adhesive plaster and leaving it there for three or four days. The case caused no further trouble.

A fibroid uterus is usually so easily diagnosed and so easily removed that I think a word of warning as to prognosis and operative risk may be in order. There is a toxin, in the opinion of W. J. Mayo and others, secreted from a fibroid in the uterus which affects the heart muscles. A careful examination of the heart with this point

in mind should be carried out in every case of a fibroid. If the heart muscles are involved the patient will usually be short of breath going up one flight of stairs. In these cases the appendix should not be removed as a routine, for it gives an added risk.

The next case is one that came to me complaining of the worst menstrual pain of which I had ever heard. She had borne three children and she claimed the pains at each period were worse than the pains of child-birth. On bimanual examination there was a tumor mass to the right side of the uterus about as large as a goose egg which we mistook for an ovarian tumor. This patient was unwell about one-fourth of the time, most of which had to be spent in bed. At operation we found the ovaries normal in size. The left tube was normal. The mass we felt was the right horn of the uterus which bent on itself and extended down toward the vagina. The tumor, which was a unicornate uterus, was about the same length as the uterus itself and about half as large as the uterus. We amputated this horn at the body of the uterus. There was no other pathology. Since the operation she has flowed three or four days a month with no pain at all.

The next case I want to describe I think is of unusual importance and often overlooked. This woman gave a history of having been confined the first and only time at thirty-seven years of age, which was three years before I saw her. She had a hard instrumental delivery. Evidently there had been no severe postpartum infection, for she was up and about in ten days. She came to me with this history: "Doctor, I have never been well since my baby was born." We have all had patients with this history. She complained of a soreness in the lower abdomen especially over the left tube. She was unwell six or seven days each month, followed by a small amount of vaginal discharge. Before her confinement she had never been bothered with any leucorrhea. Up to the time of her confinement she had always been well and strong. Bimanual examination showed a lacerated cervix, the uterus a little enlarged in size and normal in position. Both ovaries could be palpated and were normal in size. (Most normal ovaries can be palpated but not the tubes.) There was nothing definite to be felt over either tube, only tenderness on pressure. Pre-operative diagnosis was lacerated cervix and explore tubes and uterus. At operation we repaired the cervix and then opened the abdomen to find the uterus and tubes showing evidence of a chronic infection. Both tubes were

somewhat enlarged and red. The uterus was enlarged and showed evidence of a chronic endometritis and metritis. From the history and the appearance of the tubes and uterus (the patient was forty years old) we did a subtotal hysterectomy, removing both tubes. Microscopic examination of the uterus showed a metritis and an endometritis throughout. Since the operation the patient has had complete relief, feeling as well as she ever did.

The American College of Surgeons is insisting that patients who are going to have a serious operation be in the hospital one or two days before operation, and the position is correct. On our service at the Ancker Hospital we get the patients thoroughly hospitalized before they are operated on. As soon as the patients are assigned to our service they get medicine of some sort, usually bromides, until they are sleeping better and feel at home. Three or four days rest in bed makes the prognosis much better and shortens the convalescence. If a patient is very fat and has a condition that we can afford to wait with, we put them on an antifat diet, having them lose about one pound a week until there is no shortness of breath on going up one flight of stairs. Then I consider them a good risk. Patients that are poor risks usually take an anesthetic poorly. A weak heart muscle is often the cause of a patient taking such an anesthetic so poorly.

There is one absolute contra-indication to operation that I think has not been sufficiently emphasized and that is this: If I say to a patient, "You must be operated on in order to get well," and he or she says, "Well, if I am operated on I will die," that settles it with me. I have never seen a patient that said that—but what died if operated on.

POST-OPERATIVE TREATMENT

First, give morphine to relieve pain and discomfort. There are still a few surgeons who are afraid to give morphine for fear it will depress the heart or dry up secretions. Morphine does neither. It is a heart stimulant, for it causes the heart to beat slower, and it is also a diuretic.

Second, do not wait for the patient to vomit to wash out the stomach. No patient is too young, too old, or too sick to have the stomach washed out.

Third, instead of giving proctoclysis give normal saline 1,000 c.c. with one ounce of a 1 per cent solution of novocaine as a hypodermoclysis. Do not give it under the breasts but in the loose areolar tissue along the side of the chest. One can give as high as 4,000 c.c. a day. We usually give 2,000 c.c. a day. The nurses give this. Proctoclysis is contra-indicated when the patient is vomiting, for it is often the cause of the vomiting. I found this out by accident. A post-operative appendix case of mine was doing poorly. On the third day I did an enterostomy. Four days afterwards the patient died. At the postmortem I found the enterostomy had worked fine for five or six feet below the enterostomy, but not for six inches above. Since that we have given no proctoclysis when the patient is vomiting. And this explains why a high enterostomy will often save a patient when a low one will not. I do not hesitate to predict that proctoclysis will be discontinued in the future because it causes the patient to vomit more. We are now giving 20 c.c. of a 50 per cent solution of glucose b.i.d., instead of the dilute solutions.

Sodium luminal is given hypodermically three times a day as a routine.

In conclusion: There are four general phases to a surgical case: the diagnosis, the pre-operative care, the operative technic, and the post-operative treatment. Of the four the diagnosis is away and by far the most important and also the hardest to learn. The pre-operative care is the least interesting, but very important, and I am afraid that we, as surgeons, often pay too little attention to this phase of a surgical case. The operative technic is the easiest to learn because it is the most interesting part of all surgery. To the patient, good, painstaking, conscientious scientific, skillful post-operative care is the most important part of the whole operation because it is during this time that he or she fully realizes that surgery is the finest of all healing arts.

RECTAL AFFECTIONS OF CHILDHOOD*

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It is not the purpose of this brief paper to call attention to the more rare rectal conditions seen in childhood but rather to point out a few practical suggestions as to the diagnosis and treatment of the more common ones. In the past eight years I have had occasion to make proctoscopic examination of one hundred and sixty-eight children. The findings in this group correspond quite accurately with those reported by other writers. The conditions which are most frequently seen are as follows:

Fissures.—In considering this condition it is necessary to differentiate between true fissure and anal cracks. A true fissure is really a definite ulcer usually with overhanging edges and a sentinel pile, while anal cracks are simply what the name implies, *cracks*, inflamed or not, in the anal and peri-anal skin. True fissure is rather rare, but anal cracks are quite common. Fissure is usually due to a subcuticular infection, while anal cracks are due to the passage of a constipated stool or a constipated stool plus an inflamed friable skin. The skin condition is most often secondary to irritating material passed from the bowel. Anal cracks are frequently as annoying and painful as true fissure, but medical treatment will usually relieve the former, while operative procedure is required in the latter. The symptoms of either of these conditions are painful defecation, especially if the bowels are hard, and the passage of bright-red blood. The mother will frequently say that the child does not want to move its bowels and, if compelled to do so, cries with pain. This is especially true if the stool is hard. The blood noted is bright red and usually only a small amount on the stool and toilet paper. However, in case the crack or fissure is over a varicose peri-anal vein, there may be a considerable amount of blood. As the child strains and the parts become congested blood may drip from the anus. Upon spreading the buttocks and anal folds the cracks or fissure usually can be seen. Keeping the bowels soft and mild local applications will usually heal these cracks. In the case of true fissure, dilatation of the sphincter, with trimming the overhanging edges and removal of the sentinel pile, is indicated.

Polyp.—The presence of a polyp is probably the second most frequent rectal condition met

with in childhood and also the second most frequent cause of the passage of blood. Polyps in children are usually single and of the pedunculated type. The pedicle is frequently quite long, and the polyp itself is round and of a soft, lobulated raspberry-like appearance. Where the polyp is located low in the rectum it is often extruded with each bowel movement and requires manual replacement. If situated higher it may not be extruded at all or only in case the child strains as with diarrhea or constipation. If the polyp is not extruded the passage of blood and perhaps a little mucus is the only symptom. The blood is frequently in fairly large amounts and more often bright red, although there may be a few dark clots. This is apparently due to the fact that while the bowel is at rest the polyp bleeds little, if any, but when the child strains the vessels become congested and hence bleeds more freely. Bleeding is so pronounced a symptom I feel safe in saying that any child who is passing blood for which no definite cause can be found it must be almost assumed to have a polyp, and it is up to the physician to locate it. This is not always easy, but usually a combination of digital and proctoscopic examination will reveal the tumor. To illustrate the ease with which a polyp may be overlooked I will cite two cases of my own.

A child three years old was brought to my office with a history of recurrent painless rectal bleeding over a period of eighteen months. Twelve months before she had been operated on by a physician in another city for fissure, but the bleeding continued as before. I proctoscoped the child, but could find no abnormality. The child was given liquid petrolatum and the mother advised to bring the child in if she bled again. Two months later she was back. Upon this examination I was able to locate a polyp behind the third valve of Houston. Removal of the polyp stopped the bleeding.

The second case gave a similar history. Three proctoscopic examinations failed to reveal the polyp. Realizing the probability that one was present anyway I asked the mother to watch carefully to see if any round grape-like flesh was extruded and if so to let me see the child at once. My next information, received indirectly, was to the effect that the child had been operated on for a rectal tumor. I called the mother on the phone,

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and she told me that one day the child had extruded a dark-red lump like a raspberry and not a grape. Realizing that I had been mistaken as to what the real condition was she had called another physician who operated on the child at once. Apparently the only thing that could have saved my reputation in this case was for the mother to have been color blind.

I believe the reason that polyps are frequently overlooked is that they are often attached behind one of Houston's valves. An ordinary proctoscopic examination will not reveal them, but each valve must be carefully retracted and its posterior aspect exposed. Aside from physical examination polyps are distinguished from anal fissure and cracks by the fact that the passage of blood is painless; from ulcerative colitis by the fact that there are no constitutional symptoms and little or no mucus with the blood.

Prolapse.—Prolapse is the third of the rectal affections frequently met with in childhood. In the majority of cases this is merely the prolapse of the mucous coat of the bowel. The attachments between the two coats of the bowel are rather lax, especially in childhood. The straining incident to diarrhea or constipation frequently causes the mucosa to slide out through the anus for a distance varying from one-half to three inches. Once this has occurred it is much more prone to do so again. With this condition there may be the presence of a small amount of blood or mucus. This is due to irritation or erosion of the rectal mucosa and the amount of mucus or blood is always small. The presence of hemorrhoids is about the only condition which may be confused with this. Hemorrhoids are very rare in young children, and in the case of hemorrhoids the extruded mass is dark-reddish or purplish in appearance due to the varicose veins, while in prolapse the mass has the appearance of the ordinary rectal mucosa. Fortunately, the majority of prolapse cases, if seen reasonably early, will recover without operation provided the physician's instructions are carefully followed. The medical treatment is to keep the bowels soft, avoid straining, and in severe cases have defecation occur with the child lying on its side. The prolapse should be replaced at once and, if necessary, the buttocks strapped to hold it in position. More radical treatment consists in the injection of quinine urea hydrochloride or alcohol lateral to the bowel, or linear cauterization, or excision of the protruding mucosa.

Colitis.—The only type of colitis within the scope of this paper is the ulcerative type. In contradistinction to the other rectal conditions

mentioned these children usually appear to be constitutionally ill; that is, they are thin, anemic, and have diarrhea and an elevated temperature. Frequently there is a history of some acute infectious disease preceding their present trouble. There is usually a history of frequent bowel movements with the passage of much blood and mucus. The mucus is usually in large amounts but occasionally the passage may be of what appears macroscopically to be almost pure blood. The general symptoms alone usually tell us that we are not dealing with a purely local condition in the rectum and proctoscopic examination quickly reveals the extent of the lesions.

Abscess and fistula.—While not as frequent as any of the conditions previously mentioned it occurs more frequently than is generally supposed. No age is exempt. The youngest case in my series was that of a baby nine months old on whom I operated for a fistula. In this case the abscess had occurred when the baby was three months old. The symptoms are the same as in an adult. An abscess appears near the anus. This is usually connected with the bowel, and as soon as external drainage is secured a fistula is present. The moment the abscess appears it should be incised. Do not wait for the abscess to "point." Delay only means the longer duration of pain, the greater destruction of tissue, and the greater certainty of a fistula. Drainage should be established at once, and as soon as the acute inflammation subsides the fistula, if present, should be operated on. In these cases medical treatment has no value whatever.

Hemorrhoids.—Hemorrhoids in young children are very rare and, when present, are almost always of the external variety. Usually the only symptom is the presence of some bluish swelling about the anus, which enlarges when the child strains at the stool. This type of hemorrhoids do not bleed unless complicated by anal cracks or abrasions. Occasionally they become thrombotic, in which case they should be operated on, unless the clot is so small that it will be absorbed. If the varicosities are well developed they are likely to become more pronounced as time goes on, and for that reason operation is advisable. I have seen only two of these cases. One of these has been operated on, and the other is waiting until conditions in the family make it more convenient.

Foreign bodies.—In obscure rectal or pelvic disturbances it is well to keep in mind the presence of foreign bodies. These may be swallowed or, in the case of older children, may be inserted into the rectum. Most frequently the swallowed

object is some indigestible portion of food, such as a bone or a fruit pit or some object with which the child has been playing and placed in the mouth, as a marble or safety-pin. Those that are swallowed will usually be passed without difficulty unless the shape of the object or the fact that it becomes lodged in some unusual position prevents it. Even such objects as open safety-pins, which it would seem would most certainly give trouble, are usually passed without mishap. By repeated *x*-ray examinations the course of the object through the intestinal tract may be carefully followed. Objects placed in the rectum cause more trouble, for they are usually of elongated shape, such as hair-pins, pencils, etc. The location and removal of these objects are usually quite easy with proper instruments, but occasionally the size, shape, and location of the object may tax the ingenuity of the physician.

Congenital defects.—Congenital defects are of such wide variety that a complete description of all of them is impossible in this paper. In general, it may be said that in some of these cases a perfect result can often be obtained, others may be benefited, and some are hopeless. Some may demand immediate interference upon birth of the child, as in the case of imperforate anus, while in others it is better to wait until the child is older. For this reason it is best that each child be examined thoroughly upon the discovery of a defect and a course of action decided upon. This serves the best interest of the child and apprises the family of what may be expected in the case in question. Most of these cases are due to the absence of external opening of the bowel or an opening in an abnormal position, as in the vagina, bladder, etc. I have seen four such cases in the past year:

The first was a male child five days old who appeared normal for two days and then vomited meconium. The anus was normal, and a catheter could be inserted two inches but no further. The abdomen was opened, and the entire colon was found to consist of a fibrous cord with occasional dilations. This case was hopeless.

The second case was of extrophy of the bladder with the rectum opening into the bladder tissue. This case was seen only once, but it is doubtful if very much could be promised.

The third case was that of a female child with the rectum opening on the posterior wall of the vagina just at the external opening. This opening was about 0.5 cm. in diameter, but the child was eighteen months old and well nourished. A plastic operation is planned for this child later on with every prospect of an excellent result.

The fourth case is that of a male child. No anal opening was present at birth. The median raphe extending backward over a smooth surface. When the child strained a bulging could be noted which seemed to indicate the point of exit of the anus. The child's physician made a stab-wound in this area which permitted the passage of meconium and later the evacuation of fecal material. The child was six months old when referred to me, and a plastic operation gave a perfect result in this case.

These four cases will illustrate the point—that is, some are hopeless and in others a comparatively slight operation gives a perfect result.

In closing I wish to say that I have made no effort to present a highly technical paper but have simply endeavored to point out to this group, who are especially interested in children, a few of the more every-day rectal conditions met with in childhood and to emphasize the fact that rectal affections are rather frequent in children.

FORTY YEARS AGO

BY AN OLD COUNTRY DOCTOR

The marvelous expansion of medical science during recent years seems to have created a good deal of confusion in the professional mind, some gentlemen blandly assure us that no medical science existed prior to this period of rapid progress. But as this advance could be interpreted only as the rapid rearing of a super-structure which is not yet complete, on foundations already laid, it is unsafe to assume that our own generation is the only one entitled to consideration or to be taken seriously. History has paid

little or no attention to medical progress, having been preoccupied with military and political affairs, so that we are very much in the dark as to the real status of medical science in the past.

If the gentlemen who so glibly assure us that medical science had its beginnings in their own time should have received a military, instead of a medical, training they might have contended that there was no military science prior to the battle of Waterloo, for instance, and that the Roman army could not have had any knowledge

of military science, because it existed so long ago and did not have high explosives or other appliances of modern warfare. But when the excavations were made at Pompeii, the Roman sentinels were found at their posts, bearing witness to the quality of discipline that obtained in the Roman army; and historians agree that the Roman arms filled with terror the whole Western world of that time, so that the Roman army must have had something, whether we regard discipline as a part of military science or not. The Roman army did not feel the want of explosives any more than the Roman people felt the need of steam or of railroads.

We wonder to-day how the past generation of doctors got along without the *x*-ray and other essentials, while they, in their turn, cannot understand how their preceding generation got along without anesthetics and so on. While it is true that necessity is the mother of invention, it is also true that not until these inventions arrive in our midst as a boon and a blessing do we begin to wonder how we ever got along without them. It would be an assumption to contend that the capacity of the officers or the valor of the men in the Roman army was in any way inferior to those of modern times. It would also be unfair to assume that the medical men of former times were inferior intellectually to those of to-day, simply because they had to face smallpox and other plagues and epidemics, of which we have no conception, without the protection of vaccination or of serum. We cannot say that these men were not real M.D.'s who faced contagious diseases so deadly.

Nations and civilizations have arisen, passed away and have been forgotten for lack of a historian, and we cannot be sure that at some time, perhaps in the remote past, medical science may not have attained some high degree of excellence.

If we examine the group picture of a graduating class of thirty-five or forty years ago, we will notice that some of the faces wear a look of vacant curiosity. This is an index of the state of medical education at that time when medical education had struck its lowest level in this country. We shall not go into the sordid details further than to mention some of the most salient features.

The medical colleges were very numerous. They were commercial institutions which subsisted on, and made profit out of, the fees paid by the students. The student body was composed of young Anglo-Saxons from the rural districts, among whom, while there was a woful dearth of education, there was no particular

paucity of intellect. The college year was five months long, and the lectures were given in the forenoon, which enabled the student body to spend part of its time at least in the saloons in the neighborhood of the college. Medical students the world over at that time were a turbulent lot. They were very fond of beer, but the drinking was done openly and was not associated with lewd women. There were no real requirements in the way of preliminary education, or at least none were insisted on. No roll was called, so that a student's absence would pass unnoticed; it all ended happily, however, because everyone graduated with much waving of flags.

This remarkable period in medical education had its tragedies and its comedies. It was a tragedy to be launched into general practice in the country without any knowledge of obstetrics. There were some good men on the faculties. Anatomy was very well taught and threw its charm over the practice of medicine and surgery of that time.

But the most remarkable thing of all was the number of good men that this system turned out. Of course the average was very low; it could not be otherwise. Self-education was the saving grace of that generation, and the natural-born student had no difficulty in supplementing his meager medical training by subsequent study and improvement, so that we have to-day surgeons of world renown who walk modestly in our midst and do not feel themselves above the humblest general practitioner—this is what gives the American doctor his peculiar charm. In every department of medical science and education we find leaders and teachers who got their start before this system had faded to its end. Any young doctor could go to the rural districts in those days and be quite sure of making a living if he was willing to work hard, where his ability, if he had any, would glow in the darkness of isolation, where he would enjoy a certain amount of authority and importance which would be flattering to his vanity and give a touch of dignity to his appearance.

Now that the rural districts have lost their isolation there is no longer any chance for the rural practitioner displaying his skill, provided he has any skill to display. Everything is rendered colorless in the radiance of the nearest group clinic where various subtle gentlemen (the appointed specialists) put the patient through a process calculated to impress his mind with the difference between the service of an up-to-date medical establishment and the services of any lonely practitioner back in the sticks.

The patient is allowed to draw his own conclusions, and the result is that no more money is paid by him to any general practitioner for medical services. We do not say that this is not right, but it answers the question of why the doctors are leaving the rural districts. It depends of course on what is meant by the rural districts. The automobile has had much to do with removing the isolation of what might be known as the rural districts.

The country doctor of that time greatly enjoyed the district meetings of his medical society, and the thought of the meetings frequently beguiled his fancy as he rode over the bleak hill-sides. These meetings were held behind closed doors, and papers were read and discussed in clouds of tobacco smoke. The doctors themselves were a strong, rather handsome, weather-beaten lot of fellows with a certain manner and air peculiar to themselves, which was then and is now prevalent throughout the fraternity. So that when a doctor is seen he is not liable to be mistaken for one of any other craft. They could sit into the night without yawning—they left their jealousies and quarrels on the outside. Inside fraternity and harmony reigned supreme. No irregular practitioner was recognized by the medical society, and the members proclaimed their fealty to the regular profession. After the meeting was over the doctors indulged in the flowing bowl before dispersing for their homes. Of course, there was a gentleman once in a while who did not arrive at his home for some days after the meeting, and his relatives and patients would broadcast excited inquiries as to when he was last seen. The other doctors lied right loyally so as to protect the delinquent. But these were the weaklings (to be found among every gathering of men), who need the protection of women to keep them from falling into every pitfall that the evil one has dug for their uncertain feet, especially after they have tasted of any beverage containing alcohol.

The medical meeting was a haven and a refuge to the country doctor, where he could break the monotony and drudgery of his life for a few hours, when he was able to tell his troubles to sympathetic ears, to talk the talk that doctors talk, and mingle with his colleagues on terms of amity.

The mystery of the closed door piqued the curiosity of the public and it had a wholesome effect on the lay minds to see the doctors shake hands with each other so cordially before leaving for their homes, as the laymen believed that the doctors lived in a state of continual

strife among themselves over the patients.

Another fast-disappearing custom is the old-fashioned "consultation" between the common doctors. These consultations stimulated study and gave the doctors a chance to show respect for one another before the public. As many of the recent achievements of medical science had already thrown their shadow across our path even at that time there was a boundless field for study, and the gentlemen had a chance to show their erudition before their admiring colleagues.

The "consultation" was the most impressive medical ceremony by which the lay mind was reduced to a state of awe and admiration for the profession. These old doctors confined themselves to that field of surgery which is the legitimate sphere of the general practitioner. They were not eager for glory in fields beyond their skill. They did not think that every patient required a major operation, but they did the surgery that lay in their province with some degree of skill. The word "appendicitis" was not even in the dictionary and was not being shouted from the housetops by doctors and laymen alike. Other surgical conditions were recognized as existing. But in those days the high cost of living had not yet arrived to harass the poor medical man and drive him from the paths of rectitude. Economic necessity overrides every consideration, and the poor practitioner is driven to attempt surgery that it would be better for the patient if he left alone.

We have referred to the ignorance of obstetrics which accompanied the student into the field of practice. As a general rule, to which there were many exceptions, the older doctors stood by the younger men in the most self-sacrificing and fraternal manner when the young fellows got stuck in obstetrics.

It was a never-to-be-forgotten moment when you turned around and found at your elbow some colleague, who had answered your call for assistance and had come perhaps through miles of mud and mire or snow or rain to help a brother in distress.

Some good fellow who knew his work and who had not forgotten to bring a bottle of "spirits frumenti" to refresh and cheer up his exhausted colleague.

There were many good obstetricians among these country doctors. Those who combined the skill of study with the skill of experience became obstetricians, while those who depended on experience alone remained midwives. Asepsis was gaining ground in every direction, and the more intelligent of the general practitioners were

eagerly taking hold of it and trying to understand it.

The transition from the old to the new has been so gradual that it has not been perceptible. It has been part of that continuity which underlies the progress of medicine from one generation to another. The old doctors will soon be gone, and the young doctors will not be young doctors long. It would take a Rip Van Winkle to fully appreciate the changes that have taken place.

In the years that are past and gone, feminism has changed the face of learning. Coeducation had not become universal in those old days, but it was on the way and could be heard coming like a drum beating in the distance. When a student of the old times passes a school of the higher learning to-day he sees the campus thronged with female students, and bobbed heads appear at the windows, but withal a certain contempt for learning pervades the thought of the times.

At this time there existed two cults, the Homeopaths and the Eclectics which we had raised to professional rank by endless bickering and disputing with them. They called us Allopaths, and the public referred to the trinity as the three "schools" of medicine.

About this time a peremptory demand came from the public for "better service." As medical education had reached its lowest level, the cults and ourselves being on the same plane, we could not ask for any special privileges for ourselves. This demand of the public acting as a jar resulted in the Allopaths, Homeopaths, and Eclectics all fusing together. This was not supposed to happen, but it did, and we have not recovered from it to this day. It gave us a heterogeneous profession with oblique lines of thought crossing each other at so many different angles so that, in spite of the astonishing advance in medical science, as a profession, we have been incapable of progressive action.

This Homeopathic cult did not start as a medical cult at all, but quickly developed into one under our hostility and resistance.

These few remarks on that period of medical

education by no means tell the whole story. Of course, medical education has improved enormously since then. It is now on a high plane, but the individual general practitioner labors under many disadvantages that tend to keep his work below par.

Human nature is the same now as it was then and no doubt is as it was intended to be; but in these latter days, the Holy Joe has so perverted the teachings of the lowly Galilean that they have become a cross, instead of a comfort, to mankind. In their ill-advised efforts to save the weakling and degenerate from elimination by alcohol, the result of their activities has been to fan the flames of syphilis until it is now spreading as it never spread before.

The medical profession has many responsibilities which cannot be evaded and can only be met by raising itself to a high state of efficiency and by limiting its activities to its legitimate sphere.

Let the cults fight among themselves with their wooden swords. It is no concern of ours, the public will attend to *them* if they get too strong and the public may attend to us, too, if we do not mind our own business.

The recent advances in medical science require more schooling and capacity from the medical man than ever before. But if we make medical education too expensive we will defeat our purpose in more ways than one. Every highly trained medical man is an asset to the commonwealth, and the commonwealth can afford to see to it that the right kind of man should not be excluded on account of expense. Ours is a poor man's profession, but there is an inherent element of caste in our profession inasmuch as the family has always cheerfully given its most gifted son to recruit our ranks; and should we turn our face towards caste and superiority? We should never forget, when we hear the veiled prophets of revolution telling us to let down the barriers and make the way into the profession an easy one, that the revolutionists made the medical men do the work of scavengers on the streets of Moscow and other Russian cities.

CHYLOTHORAX

By J. E. ENGSTAD, M.D.

GRAND FORKS, NORTH DAKOTA

Chylous effusion, either into the abdominal or pleural cavity, is a rare complication of an injury to the thoracic duct. Edwards had found but sixty definitely established cases of chylous or chyloform ascites in the literature up to 1895, and of 31 indisputable cases studied at autopsy in 21 there was established the existence of a rupture in the thoracic duct or lacteals. Boston, in 1905, was able to collect 126 cases. The total number of cases of true chylothorax definitely established in literature was 19.

The fluid is, of course, quite similar to chylous ascites containing a little above 90 per cent of water, with 4.86 per cent of protein and 2.5 per cent fat. In our case the fat content was nearly 7 per cent by the Babcock sulphuric-acid test. This high percentage was due, in a measure, to decanting. The fluid examined was from the top of the container after it had been standing on the laboratory table for a week, therefore the fat globules probably showed a tendency to rise to the surface. The fluid showed no tendency to bacterial putrefaction after two weeks

exposure to the unfiltered air. Gandin states that chylous effusions have a strong bactericidal power.

CASE.—(In Dr. J. Grassick's service.) X, a male, aged 51. A stocky and well-built laborer. Medical history, negative with the exception of luetic infection, which was confirmed by four plus Wassermann's. History of shortness of breath on slightest exertion for the past three or four months; no pain nor cough. Complete dullness over the whole lower part of the right lung up to the area of the third and fourth intercostal space near the nipple.

The apical heart beat an inch to the left of the nipple. Hemoglobin, 68; erythrocytes, 3,300,000; whites, 6,000; urine, normal.

There was evidence of a transposition of the heart towards the left side of at least one inch, probably due to the hydrostatic pressure of the fluid in the pleural cavity.

Skiagraph confirmed the physical diagnosis, and in addition there was a marked shadow extending towards the right, a distance of about three inches, with the base about three and a half inches at the aorta.

First aspiration, 2,000 c.c. were withdrawn, and at a subsequent tapping 1,000 c.c. were aspirated, considerable fluid being left in the cavity after both aspirations, due to dyspnea and distress incident to the forcible expansion of the lungs. The aspirated fluid was a creamy-white color; slightly alkaline; specific gravity, 1.003. Smears on slides were very resistant to the usual stains, and the field revealed only an occasional mononuclear lymphocyte, the rest of the field being a mass of fat globules without a single micro-organism.

Diagnosis: Chylothorax, due to a rupture of the upper part of the thoracic duct where it lies in a posterior layer of the pleural cavity, this rupture being caused by a specific ulceration in its lumen or by a malignant neoplasm as revealed by the shadow on the skiagraph.

Subsequent history: The patient was discharged from the hospital with an unfavorable prognosis. Later he was admitted to St. John's Hospital in Fargo where he died three months after our first aspiration.

The autopsy conducted by Dr. Frank I. Darrow and his assistant just a few hours before I called on the doctor, showed the pleural cavity filled with a pus-like fluid, which had not been identified as chyle. There was an enormous aneurysm of the aorta completely filled with fibrinated blood, and it was this coagulated mass that had thrown the shadow on the skiagraph.

No search had been made to isolate the thoracic duct, nor had a search been made for the fistula in it.

A pedunculated tumor was also found an inch inside the pyloric opening of the stomach.



PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of April 15, 1926

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, April 15, 1926. Dinner was served at 6 P. M., and the meeting was called to order at 7 P. M. by the President, Dr. R. C. Webb. There were seventeen members and one visitor present.

Dr. R. G. Allison showed four series of *x-ray* plates as follows:

Series 1. A case of extreme cardiospasm associated with enormous dilatation of the esophagus. The diagnosis was made from a routine chest plate which was made for a suspected pneumonia.

Series 2. A case of hemophilia with marked joint changes. The patient, a male, aged 30, entered the University Hospital complaining of painful and stiff joints which had for several years been slightly swollen. He gave a history of several severe hemorrhages following trivial scratches. There was no family history of hemophilia that he knew of. The joint changes are typical of the advanced stage of hemophilic joint disease. These consist of an absorption of the articular cartilage with new bone formation, calcified hemorrhage in the capsule of the joint and gouged-out areas of destruction in the bones adjoining, but not involving the joint space.

Series 3. An atypical osteogenic sarcoma of the femur. The diagnosis was difficult owing to the patient having been subjected to deep *x-ray* therapy with a temporary arrest of the tumor growth and resulting regeneration of bone.

Series 4. A case of probable typhoid of the spine. The involvement was in the third lumbar vertebra with a bony bridge connecting the second and third lumbar vertebrae. The third lumbar vertebra showed typical rarefying and productive osteitis of typhoid. The patient gave a history of typhoid fever seven years ago, and his blood gives a positive Widal and Wassermann.

Dr. R. C. Webb reported a case (and showed specimen) of sarcoma of the stomach.

The patient was a woman, 68 years of age, who entered the hospital January 15, 1926, complaining of distress in the epigastrium and palpitation of the heart.

During the past few years she has been under the observation of Dr. Warner Workman, who found a blood pressure running from 175 to 200 systolic and 85 to 120 diastolic. She had a mild stroke of apoplexy about three years ago from which she made a good recovery. Two years ago she had a double otitis media. Her chief complaints, while under Dr. Workman's care, were those of headaches and palpitation of the heart and were associated with a mild kidney disease and increased blood pressure. She also complained of some gastric distress without pain and her complaint chiefly was that of gas on her stomach which was variable in its severity. The stomach condition was always a secondary affair, was irregular in occurrence, and bore no relation to the taking of food, although she seemed to

think that the taking of food relieved it if anything, and she also thought that ingesting soda gave her relief or at least caused her to belch gas. She was comparatively free from symptoms until November, 1925, when she again visited her physician, complaining of palpitation of the heart and she said that her stomach was not bothering her at that time although it had bothered her a few weeks previously.

Eight years ago, at the age of 60, she had a cholecystectomy performed by Dr. Charles Mayo from which she made a good recovery. Her stomach symptoms appeared to be those which often follow neglected gall-bladder disease where the main disturbing factor had been removed. Her past history was otherwise unimportant.

Her present illness began about December 15, 1925, at which time she had a sensation of strings drawn tightly about the upper abdomen. Three days before admission to the hospital she took some castor oil, and this was followed by vomiting substance of a coffee-ground appearance. She complained of weakness and upper abdominal distress on admission, and she appeared acutely ill.

On examination she was a short, rather stockily built person, weighing 150 pounds, very pale, and acutely ill. The general physical examination was normal. There was tenderness and some resistance in the upper abdomen and about the upper rectus scar. Her pulse varied from 100 to 110, and her temperature varied from 99 to 100 degrees. Her blood pressure was 102 systolic and 42 diastolic. The hemoglobin was 19 with the Dari apparatus, and the red blood cells numbered 1,700,000. The urine showed a specific gravity of 1.015, and a faint trace of albumin with occasional hyaline and granular casts.

A diagnosis of hemorrhage from the stomach was made, all food was discontinued, an ice-bag was applied over her abdomen, morphin was given by a hypodermic injection, and after a few hours she was transfused with 500 c.c. of citrated blood from a donor of the same group as the patient. Her general condition and her hemoglobin improved immediately, and on the following day the hemoglobin reading was 31 and the red blood cells 2,200,000. Four days later the hemoglobin had reached 37 and the red blood cells 2,700,000. Her condition seemed to be so good that an *x-ray* of the stomach was considered possible, and on January 27 Dr. Allison examined her with the fluoroscope and took a series of films. He reported an inoperable carcinoma of the stomach involving the entire lower two-thirds of the stomach.

After thoroughly discussing her condition with the relatives an operation was not advised. She continued to grow weaker and became semi-conscious February 3 and died on February 6, less than four weeks from the date of onset of the acute and severe symptoms.

An autopsy was performed by Dr. C. J. Watson, of the Department of Pathology at the University of Minnesota, on February 6, 1926, at the New Asbury Hospital, with the following findings:

"The case is that of a white woman, 68 years old, who had had stomach distress for several years.

She had a cholecystectomy by Dr. C. H. Mayo eight years ago. The gastric distress was relieved with soda. Four weeks ago she started to bleed from the stomach. Three weeks ago the hemoglobin was 19 per cent. Transfusion of 600 c.c. was done two weeks ago. X-ray of the stomach showed a large filling defect with 100 per cent obstruction. Death occurred at 7:20 A. M., February 6, 1926. The clinical diagnosis was carcinoma of the stomach.

"The body is that of a well-developed, slightly obese adult white female, 168 cm. in length, and weighing about 155 pounds. There is an old operative wound in the upper right abdomen, 10 cm. in length, oblique in direction. The autopsy is limited to the abdomen. There is no rigor; only a slight purplish hypostasis posteriorly; no edema, cyanosis, or jaundice. The pupils are equal, regular and measure 5 mm. in diameter.

"The peritoneal cavity is negative except for an evident mass in the stomach region. The appendix is small and normal. The spleen weighs 100 grams and shows no disease. The liver weighs 1,800 grams and is normal. The gall-bladder is not present. The cystic duct is much dilated and thickened."

Examination of the stomach reveals the presence of a very large mass, involving the lower half of the stomach, which, on section, is seen to extend from the mucosa right through the serosa. It is medullary, quite thick, rather white in color. There is questionable ulceration. There is extension of the mass into the gastrohepatic omentum and into the regional lymph nodes. Some of the nodes measure 2 cm. in diameter. The pancreas and adrenals are normal.

The kidneys together weigh 270 grams and are negative. The uterus is small; there is a small subserous myoma.

Microscopic examination shows the mass in the stomach to consist of many large, completely undifferentiated round cells. There is no evidence of formation of glands nor is there any suggestion of epithelium. There is a moderate stroma of connective tissue.

Diagnosis: Lymphosarcoma of the stomach with metastases to regional lymph nodes.

DISCUSSION

DR. RUSSELL GATES (by invitation) showed and explained the x-ray plates taken in this case.

DR. J. S. McCARTNEY: Primary sarcoma of the stomach is rare, only about 240 cases having been reported in 1921. In our records at the University of 5,900 autopsies there have been but two cases. Clinically this disease has no characteristic symptomatology, often closely simulating gastric carcinoma or ulcer. These tumors occur at any age, but the average is about that of gastric carcinoma. However, lymphosarcoma is a little more frequent before, than after, the age of 40. All the histologic varieties of sarcoma occur in the stomach. The percentage in the pyloric canal is less than in carcinoma and metastases are less frequent.

Type	Cases	Per cent	Per cent under 40 years of age
Lymphosarcoma	42	22.7	57
Round cell	48	25.9	46.8
Fibrosarcoma	38	20.5	27.7
Myosarcoma	19	10.2	14.2
Mixed and special	38	20.5	33.3

Dr. Kenneth Phelps read a paper, illustrated with numerous lantern slides, entitled "Some Clinical Features of Foreign Bodies in the Air Passages."

DISCUSSION

DR. WALTER ANDERSON, St. Paul (by invitation): I am very happy to have the opportunity to discuss Dr. Phelps' paper because we are very much interested in this particular line of work. Dr. Phelps, in his clinical history of the cases, emphasized points which I would like to emphasize also. We feel the history is quite important. The mother will come with the child and say, "My baby has swallowed a foreign body of some kind." Usually the mother is right. Often there are no symptoms, and if you do not believe what the mother says, and base your diagnosis on symptoms, of which there are very few sometimes, you let the case slide and do not do anything for the patient. I think it is important to have the patient x-rayed. With Dr. Wm. Lerche, I saw a young woman, 19 years of age, who had a shingle nail in the left lung, possibly since the age of two. She had had a cough since that age and did not remember ever being free from cough. She had had repeated attacks of pneumonia; said she had been x-rayed; and for the past five or six years she had been expectorating large quantities of purulent sputum. She was x-rayed, and it was very easy to see the nail in the first division of the left primary bronchus. It was removed. She now has a very definite lung abscess due to the presence of this foreign body.

Dr. Phelps spoke of the fact that most of these cases are accidental. I remember, particularly, one woman who brought her baby in and said that the baby had swallowed a safety-pin. The mother had put the pin in her mouth while changing the baby's diaper. The baby started to roll off the mother's lap. In the effort to catch the baby she opened her mouth, and the pin fell into the baby's mouth.

Another diagnostic point that Dr. Phelps emphasized was the increased amount of air in the affected side as shown on the x-ray film. That is particularly helpful in the diagnosis of non-opaque foreign bodies in the bronchi. We have seen one case in which there was apparently complete collapse of the lung due to the presence of a non-opaque foreign body in the bronchus. That was caused by a bean which had swelled after lodging in the bronchus. Within four or five days after removal, the lung expanded again until it seemed to be practically normal.

Another case we have seen was a lad who inhaled a collar button some years before. He had been treated for tuberculosis although no tubercle bacilli had ever been demonstrated in the sputum. Upon examination of the chest with the x-ray, there could be made out very indistinctly what looked to be a foreign body in the lung. That patient was bronchoscoped and there was only a skeleton of the button remaining. It had practically all eroded.

Dr. Phelps also spoke of bronchitis due to peanuts, particularly. This is the most severe local reaction that we see from foreign bodies.

I saw another case in which a child had inhaled an allspice. That gave a severe reaction with multiple abscesses which developed several weeks later. The patient was not seen until two weeks after the

accident and the foreign body had disintegrated by that time. The child subsequently died.

We are much indebted to Dr. Phelps for his very interesting paper.

DR. CAMP: I am sure we are very much indebted to Dr. Phelps for this series of cases. We have had a limited experience, in our practice, with these foreign bodies but they were easy ones and got along all right.

DR. WITICH: I want to ask Dr. Phelps what he thinks of zinc stearate and of its reaction. I had one baby who died in about three days after inhalation of the powder.

DR. PHELPS: I think zinc stearate acts as a specific poison. Dr. E. D. Anderson has had a large number of these cases.

DR. E. D. ANDERSON: I do not think they know yet just what it is. We looked up the literature about a month ago, and they do not seem to really know. It just happens that in the last eighteen months I have had 9 cases. One died but the rest got well. One interesting thing to me is how quickly you get the reaction. There is a terrific reaction from the irritation around the larynx inside of a few minutes. These children who get well usually show a temperature drop inside of twenty-four hours. On one child who died we did an autopsy, and it showed tremendous areas of bronchial pneumonia.

DR. PHELPS: There is another point about it. In my case, I thought perhaps we could show the powder in an *x*-ray film and tell whether or not it was in the lung; but in this particular case it did not show in the *x*-ray.

DR. E. D. ANDERSON: I think it would be wise for obstetricians to caution the hospitals on this point. The mothers are told to use zinc stearate as a dusting powder. This, to my mind, is criminal. I think they should be warned against it instead of being told to use it.

DR. BERGLUND: What about the reaction from the inhalation of a peanut?

DR. PHELPS: There is always a violent tracheo-bronchitis together with edema of the submucosa of the trachea and bronchi. It is a real toxic condition, and the children are extremely sick. In one patient I removed a peanut in less than three hours after it was inhaled, and the child died as a result of the toxemia.

DR. ZIEROLD: I would like to ask about massive collapse of the lung. I am curious to know whether the collapse most often cited may have been emphysema. Most of them have complete obstruction.

DR. PHELPS: If there is complete obstruction of a bronchus either one of two things occurs, i.e., collapsed lung or "drowned lung." I do not think a collapse occurs from a foreign body as often as the other condition. In foreign bodies, such as beans, which swell and cause complete obstruction, there is *x*-ray evidence of atelectasis (collapse) or drowned lung. In my experience I have never seen a real collapse following simple foreign body. The post-operative collapse, which Dr. Zierold is interested in, has been treated by removing mucous plugs from the bronchi through the bronchoscope. Jackson believes the type of collapse following diphtheria is caused by obstruction of the bronchus by the diphtheritic membrane.

Within twenty-four hours I have seen a patient with post-diphtheritic paralysis of the esophagus and larynx. Dr. Barron tells me tonight that this patient also has a collapse of the lung, which must be paralytic in etiology.

I think a bean may produce collapsed lung, as well as "drowned lung." I am very grateful indeed to have had this discussion of my paper.

Dr. J. M. Lajoie reported the following case of "Cardiac Decompensation with Marked Ascites:"

The patient, a widow, aged 46, came under my observation March 1, 1921. She stated that she had rheumatic fever at the age of 14, complicated with endocarditis, resulting in chronic heart trouble of which she was aware and which gave her some symptoms for several years.

She had two children; no miscarriages. The husband had died fourteen years before from tuberculosis of the lungs. The family history was good; no cancer, tuberculosis, nor cardio-renal-vascular disease. She was apparently well until May, 1920, when she noticed she became tired easily and exertion made her breathe with difficulty. She had had influenza in 1921. During this time she was under the care of a Minneapolis physician, who at one time called Dr. S. M. White in consultation. In spite of treatment she gradually became worse. She had received no medical attention for a month previous to the time I saw her.

Her menstrual periods were regular until August, 1920; none since. The eyes, ears, nose and throat were apparently normal. The teeth show dental caries and pyorrhea alveolaris. The blood pressure was 130/80. The circumference of the abdomen was 102 cm. No hemorrhoids or caput medusæ.

The patient was found in bed propped up on pillows, suffering from dyspnea and cyanosis. She said she felt she would be better if I could relieve her of gas in the abdomen. The skin was clear except for cyanosis of the mucous membrane. There was marked pulsation of the jugular veins. The lungs were clear, both anteriorly and posteriorly. The area of cardiac dullness was increased. There was a loud, blowing, systolic murmur, loudest at the apex and transmitted into the axilla and vessels of the neck. The abdomen was greatly distended with what appeared to be fluid. There was considerable swelling and edema of both legs.

She was treated for fifteen days as a cardiac case, with considerable improvement. The swelling in the legs decreased but the abdomen still measured 98 cm. in circumference. Abdominal paracentesis therefore was done, obtaining six quarts of clear, straw-colored fluid. The fluid was sterile after incubation and was found to contain only a few leucocytes and epithelial cells.

Upon being given large doses of digitalis for two days, the heart tones became louder and more clear; rate 74 and regular.

Urinalysis was done several times during the five years she was under my observation, the specific gravity ranging from 1.015 to 1.020. Sometimes a trace of albumin and an occasional cast were present, and at other times none. On one occasion, in October, 1922, she developed what appeared to be an acute cystitis. The urine contained a moderate amount of albumin, a good many hyaline casts, and 100 pus cells per high-power field. This condition cleared up promptly under treatment.

The lowest hemoglobin estimation was 50 and the highest 72; r.b.c. 5,130,000; leucocytes, 9,500; p.m.n., 66; small lymphocytes, 9; large lymphocytes, 18; mononuclears, 4; transitional, 1; eosinophiles, 2. The blood Wassermann was negative.

The phenoltetrachlorophthalein test for liver function fifteen minutes after injection showed 7 per cent retention. One hour later there was no retention. The p.s.p. test and blood chemistry gave no evidence of abnormal kidney function.

After a preliminary study of the case was made, the patient wanted me to promise I would cure her. I told her I could make no promises but would do the best I could. She then informed me that she wanted me to come only on call as she wanted me to do a paracentesis whenever it was necessary. She was tapped at varying intervals; the longest being thirty-five days and the shortest twelve days. She left the time for tapping until her distress became unbearable or just previous to going some place. During the five-year period I was only permitted to do what she requested, and she was seeking advice elsewhere. For a period she received treatment from a Mr. Mininberg, who had Dr. Chowning examine her for him, and for another period she received treatment from Dr. Culp, at Robbinsdale. Treatments from both these sources relieved her to some extent, but they became so disagreeable to her that she finally discontinued them.

Ten days before her death the patient called me because of severe pain in the left flank and asked for something to give her relief from the pain, which was given. This pain seemed to be in the skin of the left flank, just above the crest of the ilium in an area about two inches in diameter which was very tender and hyperesthetic. There was no tenderness in the muscles underlying this region. She had a very good night after the morphin, but I was again called the next evening because her bowels had not moved, and urine had not been passed. Various measures were tried without success. Bowel movement was finally obtained after two large doses of castor oil. After two days of complete anuria she began to pass urine in small quantities, which was of high specific gravity and contained a large amount of albumin and a few hyaline casts. This anuria was associated with nausea and vomiting. An attempt was made to get blood for blood chemistry, but the patient refused. Fairly large doses of ammonium chloride appeared to increase the amount of urine, so that after its use for two days she was passing twenty ounces in twenty-four hours.

She became very restless and irritable, and it seemed advisable to give her a sixth of morphin by mouth. This was followed by prolonged stupor, lasting well into the next day. Anuria occurred again, and she died the following night.

The patient requested her son to give me permission to make a postmortem, and this was granted.

During my attendance upon her the patient was tapped one hundred times, obtaining from twelve to eighteen quarts of fluid in each tapping, approximately 350 gallons for the entire period. After paracentesis the liver was found to extend to below the level of the umbilicus, was firm and very tender to touch. The spleen and the gall-bladder were easily palpable and the gall-bladder tender on palpation.

(Discussion of this paper was asked for before the autopsy report was read.)

DISCUSSION

DR. MCCARTHY: I saw her only on one occasion, which was at Dr. Lajoie's request as he was out of the city. At that time she was very badly distended. I did a paracentesis and removed a rather large amount of fluid. I think Dr. Lajoie will remember that I thought it was a cardiac affair and not a liver condition at that time.

DR. BARRON: Was the irregularity of the heart a fibrillation?

DR. LAJOIE: Yes, she had auricular fibrillation to a marked degree when I first saw her. I examined the heart before and after most of the paracenteses, and it did miss an occasional beat from time to time. One other thing I want to mention, and that is about two months before her death I was called to do a paracentesis, and she complained of pains in her chest. I found dulness extending up on the right side half way to the apex. There was a dry cough. This dulness disappeared after the tapping. I never tapped the chest.

DR. BEARD: Did she die a cardiac death?

DR. LAJOIE: Death was due apparently to uremia. I might mention that a renal calculus was found in the right kidney at autopsy.

DR. BERGLUND: I think she had adhesive pericarditis with cirrhosis of the liver.

DR. BEARD: I think she had congenital cysts of the liver.

DR. LAJOIE: When I saw her the first time I thought she had a heart condition, and that the liver condition was secondary to the heart condition. Though she had a bad heart at the beginning, the heart improved but the liver condition remained.

DR. BERGLUND: F— had fluid and had to be tapped. He worked it out that on a dry diet he had about three times as long an interval between paracenteses as on a more wet diet.

DR. LAJOIE: This patient was on a dry diet for the first fifteen days I saw her. This was salt-free. The edema disappeared to a very great extent, but the fluid in the abdomen was not reduced. Later in the course, while she was on a dry diet she had longer intervals between the tappings but she said the longer intervals were not worth it because the tappings did not hurt her in the least.

DR. MCCARTNEY: The following is an abstract of the autopsy report in this case: The fluid removed from the abdomen measures about 12 liters in amount; it is clear and straw-colored. On opening the peritoneal cavity, after removing the fluid, many adhesions are noted. The omentum is adherent to the anterior parietes. The diaphragm is at the fifth rib on both sides.

The right pleural cavity is completely obliterated; the left contains about 500 c.c. of clear fluid. There is fibrinous pericarditis. The heart measures 17 cm. transversely.

The heart weighs 410 grams. The right auricle is markedly dilated. The right ventricle is dilated and hypertrophied. The left auricle is dilated, and the wall is thin. The mitral valve will almost admit two fingers; the edges do not come together; they are markedly thickened and nodular; no fresh vege-

tations are noted. There is slight hypertrophy of the left ventricle. The root of the aorta shows moderate arteriosclerosis.

The left lung weighs 600 grams, the right 360 grams. There is apparent partial collapse of the right lung. Both lungs are firm and reddish on section; they contain frothy fluid.

The spleen weighs 270 grams. There is marked thickening of the capsule, which is white in color and quite hard. The pulp is dark, apparently congested. The follicles are not prominent.

The liver weighs 1,400 grams. The anterior portions of the right lobe are continued as extensions inferiorly. This evidently gave rise to the erroneous impression of hepatic enlargement. Several areas on the surface of the liver are thickened and white in color; they are firm in consistence. The left lobe of the liver is adherent to the spleen. On section the liver is dark in color and finely mottled, light areas intermingling with darker ones. The parenchyma is quite firm. The gall-bladder is negative.

The gastro-intestinal tract, pancreas, and adrenals show no disease.

The kidneys weigh 75 grams each. There is moderate bilateral hydronephrosis. The surfaces of the kidneys are pitted. A small, hard, firm mass or stone is found lodged in the upper calyx of the right kidney. The hydronephrosis is unexplained, unless it is on the basis of previous nephrolithiasis.

The lower segment of the uterus has undergone hyaline degeneration with secondary calcification.

The lymph nodes show no disease.

The diaphragm on the right is markedly thickened in its posterior portion and on section there is a small amount of material which is apparently cholesterinized. This seems to be in the middle of the diaphragm, the upper and lower portions of which have become considerably thickened and fibrous, in places hyalinized. This area is thought to represent an old encapsulated empyema or an old localized peritonitis. Because of the hyaline plaques on the liver surface, the latter seems more probable.

Diagnosis:

1. Old healed defect of mitral valve (mitral regurgitation).
2. Cardiac decompensation.
3. Chronic passive congestion of lungs and spleen with cyanotic induration of the liver.
4. Nephrolithiasis with slight bilateral hydronephrosis.
5. Hyaline perihepatitis and perisplenitis.
6. Probable old healed diaphragmatic abscess.
7. Marked ascites.

DONALD MCCARTHY, M.D.,
Secretary.

BOOK NOTICES

DISEASES OF THE NEW-BORN: A MONOGRAPHIC STUDY.
By John A. Foote, M.D., Professor of Diseases of Children, Georgetown University Medical School. Illustrated. Price \$5.00 Philadelphia and London: Lippincott Co., 1926.

This book contains a series of very instructive essays on the more common diseases of the new-

born. It is well written, and its style and method of approach make it particularly suitable for the student of pediatrics and for the general practitioner. The chapters on methods and habit-formation are especially good.

This book should make a valuable addition to the library of anyone interested in the diseases of the new-born.

—D. M. SIPERSTEIN, M.D.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume V. Number VI. (Philadelphia Number, December, 1925.) 223 pages with complete index to volume 5 and 50 illustrations. Per clinic year (February, 1925, to December, 1925.) Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

Volumes V and VI are the so-called Philadelphia numbers. Among the valuable contributions in this number are clinics of John B. Deaver. The author has covered practically all the surgical diseases of the abdomen. Of exceptional value and interest is his clinic on peritonitis, which field he has covered very thoroughly. He has likewise covered gastric and duodenal ulcer and cancer of the stomach and bowel, with just a brief mention of appendicitis and gall-bladder disease.

The clinics of Charles H. Frazier on neurological surgery are classical. The author deals in detail with surgical treatment of trifacial neuralgia, spinal-cord tumors, and pituitary disorders.

Dr. Francis Clark Grant has a fine résumé of the management of cranial trauma. This is of especial value to the man of general practice who rarely sees a case of skull fracture.

Dr. George H. Muller has written up numerous clinics on general surgery, and, together with the associate staff at the University Hospital, has a symposium on lung abscess and gall-bladder disease which covers the field, both medical and surgical, very thoroughly.

Drs. Anspach, Herman, and Northrop have valuable contributions on such subjects as cancer of the pelvic organs, urogenital tuberculosis, plus a few other surgical entities which should be of interest to the general surgeon.

—EDWARD A. REGNIER, M.D.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume IX, Number V, (Chicago Number, March, 1926.) Octavo of 206 pages; and Number VI, (Chicago Number, May 1926.) Octavo of 202 pages including complete Index to Volume IX, with 24 illustrations. Per clinic year, July, 1925, to May, 1926. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

A good variety of clinical material is found in the March and May numbers from Chicago. Angina pectoris, hyperthyroidism, and diabetes mellitus call for two or more clinics each. The case-reports and their discussions make interesting reading and doubtless fill a demand from the practitioner for other viewpoints on diagnostic and therapeutic problems.

Perusal of these valuable reports may leave the reader in doubt as to the investment of his reading time when he remembers the journals reporting clinical and other research applicable to medicine.

C. A. McKINLAY, M.D.

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AUGUST 15, 1926

THE QUARTERLY CUMULATIVE INDEX

The American Medical Association publishing office has been for some years improving its *Quarterly Index*, and the number of articles that refer to medical topics has increased to such volume that a change has been necessary in that the numbers of volumes are to be slightly altered, but without any added expense to the subscriber, although the expense of getting out the *Index* is materially increased. When one looks over the number of medical journals published all over the world and from which this *Index* draws much of its material, recording in a very precise manner the name of the publication, its date, the article, and the pages on which it appears, one realizes that it must mean a decided increase in the work of those who edit and publish the *Index*.

When one realizes the value of the *Quarterly Cumulative Index* to the general practitioner, and especially to the man who is writing an article on some special subject, one is lost in contemplation. For instance, if you are writing on some ordinary topic of medical literature, or you have a special case that is unusually interesting and you want to add to your own account of the individual or the disease, you will find that the *Quarterly Cumulative Index* is of great value to you. Then, too, you can get, through correspondence with the American Medical Association office, an abstract of any article that you desire. Yet the

writer doubts whether the numbers of these volumes are spread over wide enough territory. Every physician, whether he is writing or reading, should have the *Index* at his elbow in order to enlarge the scope and to add to the structure of any article he may be writing. The criticism may be advanced that there is too much medical literature. That may be true, but the man of discrimination who writes on a special subject will prepare a better article if he has the assistance of the archives of the A. M. A.

The publication of a medical journal is no easy task, although it seems to some of the readers, and particularly to the non-readers, that it is an easy proposition; that all one has to do is to send in an article and that it will be printed exactly as it is received. This is very unlikely. Sometimes the title is deficient, that is, not sufficiently explanatory; or perhaps it is so simple that it does not carry weight or meaning. Then, too, the approach of an article is no easy matter. It is well known in most books, of whatever sort, that the opening paragraph should contain at least an abstract or a suggestion of what the article contains, and it should be made forceful enough to attract attention of the readers who will then follow it through. After the article is prepared the editor or the publisher, or the proof-reader, will have his troubles because the manuscript must be coherent and instructive. This means not infrequently correspondence between the writer and the publishing house. It also means the setting-up of the article after it has been gone over by the editor and minor corrections made or attention called to some faultiness in construction of sentences or paragraphs. Then follows the galley-proof, sometimes set up very awkwardly and without due regard for corrections of errors. After the galley-proof has been read by three or four men it presumably is in good order, but the probabilities are that the printer, even then, may slip up on something and a very undesirable misfit or misprint comes out in the writer's favorite topic, upon which he has so laboriously engaged himself. Then comes the reader, and if he is a real reader of medical literature he wants something that is worth while. It is often found that articles are too long to fix the attention of the reader, just as some of our editorials are too long, and it is very difficult for the writer to be concise and comprehensive, to put in his article all that is really necessary for the reader and without too much verbiage. The man who has a crisp way about him in reporting his cases or in writing an article attracts immediate attention, and everything he writes is read

by someone and probably by many. But whether his article is well or indifferently written, it is duly recorded in the *Quarterly Cumulative Index*.

The editor of a medical journal often wonders how many articles in the body of the journal are read. Certainly not all of them, and incidentally the reader may miss something that is very important, that is very instructive and is written in a very interesting way. So it behooves the man who writes the article, as well as the reader of it, to make due allowance for its appreciation.

THE TREATMENT OF GENERAL PARALYSIS OF THE INSANE BY MALARIA

This is a subject which the editor hesitates about suggesting, even, although in many of the medical journals of the day one picks up an article with such glowing accounts of the relief of general paresis by malarial infection that he must at least suggest something. It is generally admitted, first, that the advanced case of general paresis is the subject for malarial invasions on the assumption that all other antispecific remedies have been tried and have failed. One thing, however, should be kept in mind, and that is the periods of remission that frequently come to the general paretic. Many cases are so much improved by care that they have a remission which may extend over a year or even longer; then the symptoms return with all their fervor and activity. It is then the man who is interested in the malarial treatment decides that the time is ripe for the introduction of the malarial toxin. In an article in the *International Medical Digest*, published in Hagerstown, Maryland, there is an abstract of a case from the *Medical Journal*, Australia, April 10, 1926, in which Ellery, the author of the article, has treated six cases of general paresis and used the following technic, which describes the whole situation:

"From the median basilic vein of an untreated malarial patient at the height of a pyrexial period, 2 to 3 c.c. of blood were withdrawn into a syringe previously sterilized and washed out with a solution of sodium citrate. The blood was then immediately injected either subcutaneously or intramuscularly into the general paretic at a site just internal to the angle of the scapula. After an incubation period varying from 10 to 21 days the expected febrile attack and rigors appeared and fresh patients were inoculated from the first recipient by a similar procedure.' When necessary to curtail or terminate the treatment, the patient was given five grains of quinine sulphate

in tablet form three-times a day for three days. Patients were allowed, so long as their general physical condition warranted, to have 10 or 12 rigors, at the end of which time the quinine was given. From the very first day of quinine administration the rigors ceased and the temperature remained below normal, and only in one instance did a relapse occur, which was easily stopped by the further administration of quinine."

All this seems a very simple procedure, at least simple to the operator, but with the patient it is a matter of very serious and doubtful consideration, sometimes. Here is where we begin to find, in the medical reports of these cases, the tremendous number of remissions, usually called recoveries and improvements. We are told by some authorities that 50 to 60 per cent of the patients treated were cured. This was based on the supposition that the patient had a remission, and the enthusiastic operator hastened to record his results. A large number are reported "improved," whatever that means in a case of general paresis, and a comparatively small number, according to statistics, were unimproved or died.

The query enters one's mind at this point how reliable these records are, and how valuable are these percentages. Of course, this is now being tried out all over the world and there seems to be no end to the number of malarial patients who furnish the malaria toxin. Many hospitals have undertaken this new form of medication, and a majority of them report favorably. But if one investigates the matter carefully or studies the hospital records, one will find that in the cities a large number of general paretics suffer from the malarial infection and go on as they did before; that is, they were not benefited in any way except as any other new element introduced into the blood stream might produce a similar improvement.

The Australian writer quoted above says that convalescence in his six cases was as a rule of short duration, and recovery in the successful cases was rapid. He further records that there was a definite anemia after the usual series of rigors. The appetite was generally good, and, although the patients had lost weight and were considerably weakened, with a liberal diet of good food they quickly gained weight and lost all traces of anemia. From his article it is further quoted: "Mental improvement quickly followed physical improvement. Delusions disappeared, and filthy habits became normal, and the patient became amenable to reason and conscious of the social conventions. Exaltation subsided into a mild euphoria, and the feeling of well-being was

manifested in a desire to become useful. The two patients who derived no benefit from the treatment showed a willingness to work in the wards and a keen desire to be discharged and take up again their civilian responsibilities." Here another question comes up: Were these two patients out of six really better, or was it a suggestion on the part of the altered blood stream, perhaps a destruction of some of the spirochete; or was it the enthusiasm of the operator, who felt that they had improved? Although drawing conclusions from a limited number of cases, the author feels that "The earlier the malarial treatment is commenced in the stage of the disease the greater is the success to be gained. Naturally, with an organic disease like general paresis no form of febrile therapy can replace or patch up actual neuronc degeneration, and little can be expected in any form of treatment from patients who have reached the advanced stages." This seems to be the most sensible comment upon malarial treatment we have seen. A man who has a general paresis has a diseased brain in which part of its structures are disorganized or destroyed. And it seems rather incredible that any remedy could produce what was anything like a recovery. The writer further goes on to say that "despite the noticeable mental improvement, the neurological and physical signs in these patients were unaltered. Pupillary changes, reflexes, and Wassermann reactions appear to remain the same after as before treatment."

Better results seem to appear in the exalted and excited cases than in patients who are depressed and demented. Then, too, in this article quoted, one author found that by using this treatment 33 per cent of his cases were greatly improved (for how long he does not say); 20 per cent showed a good remission and a capacity of employment (whatever capacity means), while 32 per cent belonged to the slightly improved or unimproved. The remaining 15 per cent died.

It is probable that we shall hear more of this from time to time and we shall not know just how far to accept the conclusions; neither shall we be able to select our cases properly; and very often, too often, shall we see improvement, our patients will be discharged, and all traces of them lost. Conclusions, therefore, are not very satisfactory.'

DIETARY COMMENTS

We occasionally stumble upon something that suggests disease, especially arterial disease or general degenerative disease, which may be due to excesses in protein diet, and this is the sub-

stance of an article in the *Archives of Internal Medicine*, a paper published by F. R. Nuzum and others, of Santa Barbara, California, on arteriosclerosis and increased blood pressure. The experimenters fed to animals, for a period of two years or less, an excess protein diet and thereby obtained increased blood pressure. They also found that these animals presented extensive arteriosclerosis of the aorta and, in many instances, of the coronary arteries. Evidence of kidney injury was also obtained, as demonstrated by chemical studies of the blood and urine. Excessive fat was found in the liver and myocardium of the animals thus fed on a diet high in cholesterol.

Then in the medicolegal column of the *Journal of the A. M. A.* an account is given of a man who was insured against the results of bodily injury effected through external violent and accidental means. The company contended that this should be the sole and only cause of death, disability, or loss. Unfortunately, this man had arteriosclerosis, and the judge who tried the case said the plaintiffs could not recover if disease contributed to the death of the insured in any degree. Then he qualified this by saying: "I say, further, that arteriosclerosis of certain arteries of the body is not disease within the meaning of the word in this charge." We wonder what it was. That poor man probably had been feeding on a protein diet and had an unrecognized or perhaps a normal physiological arteriosclerosis. Yet when he fell downstairs and died therefrom his beneficiaries were unable to recover damages from an insurance company because he had arteriosclerosis. If this statement be true, not many men can take out insurance safely, and not many companies could issue insurance on the ground that a man was free from arteriosclerosis. The time is coming, surely, when the insurance company will issue a warning to its insured that they must avoid certain excesses in protein diet, otherwise the company will not be responsible for the insured's death by accident, injury, or disease.

This is one of the cases in which there was a disparity between the testimony given by the experts. And in the case just quoted in which reliance is placed on expert or opinion evidence it is important to point out to the jury that the opinion of an expert has no force in case the jury fails to find that the facts assumed in the hypothetical question were true. This is another one of the muddled up cases in which probably neither judge nor jury understands the full significance of what had taken place. For the judge

further said that if the plaintiffs might recover, it was necessary for them to prove that disease did not contribute "in any degree" to cause death. What are we coming to? It is about time we had a definite understanding with the world.

Right on top of this comes the statement that Steffanson and the Eskimos lived for nine months to a year on nothing but protein diet, and they all came out fatter and better and healthier than when they went in! Evidently it is necessary to consider each individual case very carefully before being either insured or treated, and particularly dieted.

The editor had a very refreshing experience the other day when he met a prominent man in consultation. He asked this man what he would suggest in the way of diet for the patient, and he very frankly said, "I know nothing about diet at all. I would let the woman eat what she found was best for her." And here goes the explosion of another pet theory. Who knows anything about diet, except the dietitian and the cook who prepares the food, and the unfortunate individual who eats it.

NEWS ITEMS

Dr. D. J. Dunn has moved from Worthington to St. Cloud.

The Weum Hospital building at South Haven has been sold.

Dr. John M. Ekrem has moved from Mobridge, S. D., to Gully, Minn.

Dr. E. J. Hotz has moved from Jamestown, N. D., to Gaylord, Minn.

Dr. L. G. Smith has moved from Bismarck, N. D., to Mandan, N. D.

Dr. L. M. Keene has moved from Mellette, S. D., to Winthrop, Minn.

Dr. J. A. Kittelson has moved from Tolley, N. D., to Sioux Falls, S. D.

Dr. Frank R. Hirschfield, of Minneapolis, was married last month to Miss Ruth Daly, also of Minneapolis.

The village of Warroad, Minn., has purchased the Warroad Hospital and will conduct it as a village-owned hospital.

Dr. Andrew P. Goblirsch, a 1924 graduate of the Medical College of the University of Minnesota, has located at Sleepy Eye.

Dr. A. G. Wethall, of Minneapolis, accompanied by his wife and two daughters, has gone to Vienna to do postgraduate work.

Dr. F. W. Franchere, of Lake Crystal, is building a large residence with space on the ground floor for several beds for hospital use.

Dr. Lawrence Carlson, a 1925 graduate of the Medical College of the University of Minnesota, has become associated with Dr. A. G. Chadbourn, of Heron Lake.

The contracts have been let and work has been begun on the construction of the building for St. Raphael's Hospital at Rochester. The cost will exceed \$1,000,000.

On the first of August \$10,000 had been subscribed for the new hospital at Rapid City, S. D. This assures the success of the hospital, which will cost about \$15,000.

Dr. John P. Hawkinson, a 1925 graduate of the Medical School of the University of Minnesota, and Miss Mabel Johnson, also of Minneapolis, were married last month.

Dr. Elon O. Hunter, who practiced in Minneapolis until twenty years ago, died last week in DeLand, Florida, at the age of 57. He was a retired surgeon in the U. S. Navy.

The General Hospital of Minneapolis is seriously considering the problem of enlargement of its plant to the extent of one more large building to meet a pressing need for more space.

Dr. Henry A. Roust has moved from Wykoff to Fairmont, where he becomes associated with Dr. H. P. Johnson. Dr. Roust is a 1924 graduate of the Medical School of the University of Minnesota.

The community hospital at Isle has passed into private hands, and will be open to all physicians. It was sold to Mr. A. M. Wheeler. Dr. C. E. Holm, who recently located at Isle, will be the resident physician.

Dr. C. A. Saffert, a 1925 graduate of the College of Medicine of the University of Minnesota, has formed a partnership with Dr. T. F. Hammermeister, of New Ulm, who is a 1915 graduate of the same school.

Dr. E. P. Quain, of Bismarck, N. D., was one of the guests who presented papers at the recent Minnesota State Medical Association meeting. His paper was on "Periduodenitis" and appears in *Minnesota Medicine* for August.

The members of the Scott-Carver Medical Society, with their families, were the guests of Dr. and Mrs. H. P. Fischer, of Shakopee, at their summer home, the Beachview, at Prior Lake on July 28. A buffet supper was served by the hosts.

Dr. E. H. French, of Plainview, has sold his practice to Dr. W. R. Loney, of Minneapolis. Dr. French is a 1903 and Dr. Loney a 1925 graduate of the Medical School of the University of Minnesota. Dr. French retires on account of poor health.

Dr. Edwin J. Wohlrabe, a 1924 graduate of the University of Minnesota, has become a member of the Vogel & Seifert Clinic, of New Ulm. Dr. Clarence F. Wohlrabe, a graduate of the same class, is now practicing at Young America; and Dr. Arthur H. Wohlrabe, of the class of '13, is practicing in Minneapolis. And they are brothers, Minnesota born.

The Minnesota State Fair, which opens on September 4, for a week, offers the physicians of the Northwest a fine opportunity for a few days of rest. This Fair becomes better every year. The Twin City hospitals and physicians extend a cordial welcome to outside physicians to visit their offices, their clinics, and the hospitals of both cities and "Midway" during the week of the Fair.

Dr. Halbert L. Dunn (son of Dr. Louis Dunn, of Minneapolis), Associate Professor of Biometrics in Johns Hopkins University, has been aiding the U. S. Census Bureau in making checks on the registration of births and deaths in Oklahoma City to determine whether the State is qualified to become a part of the registration district of the United States. Dr. Dunn will visit his parents in this city before returning to Johns Hopkins.

Dr. George C. Main, who has recently completed one year's postgraduate work as resident surgeon in urology and dermatology at the U. S. Naval Hospital in Brooklyn, N. Y., has joined the Stutsman County Clinic at Jamestown, N. D., as head of the Department of Urology and Dermatology. Dr. Main is a graduate of St. Louis, Mo., and received his interne training at St. John's Hospital in that city and in the U. S. Naval Hospital at Brooklyn, N. Y.

Dr. W. R. Winn, formerly of Columbus, Georgia, has joined the Stutsman County Clinic of Jamestown, N. D., as head of the eye, ear, nose, and throat department. Dr. Winn has just

completed a year's work in the Presbyterian Hospital of Chicago under Dr. Geo. E. Shambough. He has also had postgraduate work in New Orleans and was house surgeon in eye, ear, nose, and throat work at Santo Thomas Hospital, Panama Canal Zone. While in Chicago he specialized in eye, ear, nose, and throat work.

The Eitel Hospital tendered the Hennepin County Medical Society the entire upper floor in its new Loring Medical Building rent free for a term of five years and at the cost of up-keep thereafter. A committee of the Society was appointed to make a thorough investigation of the situation, and at a special meeting of the Society held last month the offer was declined because of a lack of room to meet the Society's present and prospective needs. A vote of cordial thanks for the generous offer was passed by the Society.

The new class of the two-year pre-medical course of the University of North Dakota begins work this year with twenty-eight members, all that can be accepted. The students were selected from seventy-five applicants. Twenty-two members of the new class are residents of North Dakota, and one is a woman. Acting Dean Banks has seen a prosperous year for the Medical School, and Dean French, who returns after a year's absence spent in research work, will take up his work with real rejoicing in the work of the University Medical School. Dr. J. G. Sinclair, of the staff, takes a year's leave of absence.

Stutsman County (N. D.) Medical Society

The Stutsman County Medical Society's last regular meeting was held July 26, at Jamestown College, Jamestown, N. D.

Dr. Lamont, of the North Dakota State Tuberculosis Sanatorium, presented a paper on "Tuberculosis of the Chest," illustrating his paper with x-ray pictures. Dr. Donald W. Johnson reported two cases of kidney stones. The next meeting will be held the last Monday in September.

—H. M. BERG, M.D.,
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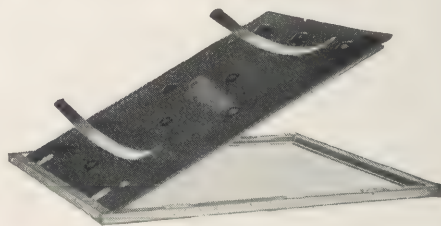
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COUNCILOR—FIFTH DISTRICT

L. N. GROSVENOR, M.D. (Clerk).....Huron

COUNCILOR—SIXTH DISTRICT

FREDERICK TREON, M.D. (Chairman) Mitchell

COUNCILOR—SEVENTH DISTRICT

R. W. MULLIN, M.D.....Sioux Falls

COUNCILOR—EIGHTH DISTRICT

J. P. ISAAC, M.D.....Freeman

COUNCILOR—NINTH DISTRICT

F. W. MINTY, M.D.....Rapid City

COUNCILOR—TENTH DISTRICT

J. C. WATERMAN, M.D.....Burke

COUNCILOR—ELEVENTH DISTRICT

A. E. BOSTROM, M.D.....De Smet

COUNCILOR—TWELFTH DISTRICT

PERCY PEABODY, M.D.....Webster

DELEGATE TO THE AMERICAN MEDICAL ASSOCIATION

R. L. MURDY, M.D.....Aberdeen

ALTERNATE

W. R. BALL, M.D.....Mitchell

HOUSE OF DELEGATES

ABERDEEN DISTRICT

C. E. McCAULEY, M.D.....Aberdeen

E. A. PITTENGER, M.D.....Aberdeen

WATERTOWN DISTRICT

J. B. VAUGHN, M.D.....Castlewood

MADISON DISTRICT

CHARLES C. HOAGLAND, M.D.....Madison

PIERRE DISTRICT

A. A. McLAURIN, M.D.....Pierre

HURON DISTRICT

O. R. WRIGHT, M.D.....Huron

MITCHELL DISTRICT

F. D. GILLIS, M.D.....Mitchell

T. B. SMILEY, M.D.....Mt. Vernon

SIoux FALLS DISTRICT

P. R. BILLINGSLEY, M.D.....Sioux Falls

P. E. BRANDON, M.D.....Sioux Falls

L. J. PANKOW, M.D.....Sioux Falls

YANKTON DISTRICT

L. F. BEAL, M.D.....Irene

E. M. MOREHOUSE, M.D.....Yankton

BLACK HILLS DISTRICT

N. T. OWEN, M.D.....Rapid City

W. E. MORSE, M.D.....Rapid City

ROSEBUD DISTRICT

J. C. WATERMAN, M.D.....Burke

KINGSBURY COUNTY DISTRICT

C. A. BUTLER, M.D.....Lake Preston

WHETSTONE VALLEY DISTRICT

G. H. LOWTHIAN, M.D.....Milbank

COMMITTEES

COMMITTEE ON CHILD WELFARE

CLARA E. HAYES, M.D. (Chairman)....Waubay
E. A. PITTENGER, M.D.....Aberdeen
WM. DONAHOE, M.D.....Sioux Falls

COMMITTEE ON LEGISLATION AND PUBLIC POLICY

R. D. ALWAY, M.D. (Chairman).....Aberdeen
S. M. HOHF, M.D.....Yankton
H. T. KENNEY, M.D.....Watertown

COMMITTEE ON EDUCATION

J. C. OHLMACHER, M.D. (Chairman)..Vermilion
J. P. ISAAC, M.D.....Freeman
ARTHUR JACKSON, M.D.....Lead

COMMITTEE ON HOSPITALS

W. R. BALL, M.D. (Chairman).....Mitchell
R. G. STEVENS, M.D.....Sioux Falls
M. M. GROVE, M.D.....Dell Rapids

COMMITTEE ON CONSERVATION OF VISION

L. N. GROSVENOR, M.D. (Chairman).....Huron
J. M. WALSH, M.D.....Rapid City
C. C. HOAGLAND, M.D.....Madison

COMMITTEE ON NECROLOGY

JAMES B. VAUGHN (Chairman)....Castlewood
J. F. ADAMS, M.D.....Aberdeen
G. H. LOWTHIAN, M.D.....Milbank

**PLACE OF 1927 MEETING
HURON**

PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

FIRST MEETING—WEDNESDAY, MAY 19, 1926

The first meeting of the House of Delegates of the Forty-fifth Annual Session of the South Dakota State Medical Association was called to order at the Hotel Sherman, Aberdeen, at 12:45 P. M., on Wednesday, May 19, 1926, by the President, Dr. W. R. Ball, Mitchell.

The following Councilors and Delegates were present:

COUNCILORS

FIRST DISTRICT

R. D. ALWAY, M.D.....Aberdeen

SECOND DISTRICT

H. W. SHERWOOD, M.D.....Doland

THIRD DISTRICT

J. R. WESTABY, M.D.....Madison

FOURTH DISTRICT

A. A. McLAURIN, M.D.....Pierre

FIFTH DISTRICT

L. N. GROSVENOR, M.D.....Huron

SIXTH DISTRICT

FREDERICK TREON, M.D.....Chamberlain

SEVENTH DISTRICT

L. G. HILL, M.D.....Sioux Falls
(Substituting for R. W. Mullen, M.D.)

EIGHTH DISTRICT

J. P. ISAAC, M.D.....Freeman

TENTH DISTRICT

J. C. WATERMAN, M.D.....Burke

ELEVENTH DISTRICT

A. E. BOSTROM, M.D.....DeSmet

HOUSE OF DELEGATES

FIRST DISTRICT

C. E. McCAULEY, M.D.....Aberdeen
E. A. PITTENGER, M.D.....Aberdeen

SECOND DISTRICT

J. B. VAUGHN, M.D.....Castlewood

THIRD DISTRICT

CHAS. C. HOAGLAND, M.D.....Madison

FOURTH DISTRICT

A. A. McLAURIN, M.D.....Pierre

FIFTH DISTRICT

O. R. WRIGHT, M.D.....Huron

SIXTH DISTRICT

F. D. GILLIS, M.D.....Mitchell
T. B. SMILEY, M.D.....Mt. Vernon

SEVENTH DISTRICT

P. E. BRANDON, M.D.....Sioux Falls

EIGHTH DISTRICT

J. A. HOHF, M.D. (Substitute).....Yankton
C. S. LANGLEY, M.D. (Substitute).....Yankton

TENTH DISTRICT

J. C. WATERMAN, M.D.....Burke

ELEVENTH DISTRICT

C. A. BUTLER, M.D.....Lake Preston

TWELFTH DISTRICT

G. H. LOWTHIAN, M.D.....Milbank
President Ball and Secretary Cook.

The Secretary stated that the minutes of the 1925 meeting had been published in full in THE JOURNAL-LANCET, and moved their adoption as published.

Motion seconded and carried.

Dr. J. F. D. Cook presented the following report:

**REPORT OF THE SECRETARY
1925-1926**

To the President of the South Dakota State Medical Association and the House of Delegates:
As directed by the Association at the session in Sioux Falls, copies of the resolutions adopted relating to the narcotic license fee and income tax were sent to the President of the United States and to the Senators and Congressmen of South Dakota, as well as to all the physicians of the State

of South Dakota. The Secretary to the President responded favorably to the resolutions, and letters were received from all Senators and Congressmen commenting favorably upon the contents of the resolutions.

A statement pertaining to periodic physical examination was prepared and mailed to all the physicians of the state, with the blanks adopted by the American Medical Association enclosed for their use in making the examinations. Their attention was also called to May Day as Child Health Day. As the State Board of Health was making a drive to impress the laity with the importance of periodic physical examination for every child in South Dakota, I asked the physicians of the state to show the laity that we were willing "to take our own medicine," and have a physical examination. The reply to this matter was gratifying and shows an interest, but there is room for improvement.

I have mailed letters to all non-members in the state, enclosing for their convenience an application blank for membership in District Societies. Some responded as new members, others stated personal reasons why they were not members. I am sure that a personal interview would clear up the impressions some of the men have regarding qualifications for membership.

At the close of the meeting of the Board of Medical Examiners every physician was given an application blank and asked to make application to his District Society for membership. In my position as Superintendent of the State Board of Health I have been able to check up on the men making application, and the high percentage has been very gratifying. At the next meeting in July I shall endeavor to make out their applications before they have the examination, which may help.

I have made official visits to four District Societies and was invited by the Huron District Society to visit them, but circumstances prevented my attendance. I expect to visit all District Societies soon.

As collaborating epidemiologist of the United States Public Health Service, the Surgeon-General, H. S. Cumming, has assigned the State Board of Health strip films of syphilis in all stages, and also of the lesions of the skin which resemble syphilis. This material is to be shown by the State Board of Health to medical societies. The films represent a wealth of material for study, and it is my plan to take them to each District Society in the state, if possible, depending upon the demand and whether arrangements can be made with the societies.

Material from the American Medical Association sent for consideration by the Board of Councilors was copied and forwarded to the members of the Board of Councilors. Copies of the new by-laws were procured and mailed to the Councilors for their consideration, so that they might be able to recommend such changes as may pertain to the needs of the Association. Our supply of the by-laws is exhausted.

The law regulating Electric Baths, Sections 7731-7732-7733, Revised Code of 1919, should be given consideration at the next session of the Legislature. As it stands it is a bad law. Electricity as applied to the human body constitutes a large field of endeavor and rightly belongs to the field of medicine

as a therapeutic agent. It is just as potent as any of the drugs in the pharmacopea. A person licensed under this present law can do anything with electricity as applied to the human body without scientific knowledge on which to base the indications for such treatment. An applicant before the Board of Medical Examiners, when asked if he had had training in medicine or physical diagnosis, said that he had not, and did not make a diagnosis, but treated individuals for the disease they said they had. He stated that the patients always referred to the fact that their doctor had diagnosed their trouble, and he gave the treatments as designed for that particular disease—Abrams, diathermy, x-ray, Morris wave, lights of all types; in fact, any and all, *ad infinitum*. This is an absurd condition, and measures should be taken adequately to control these operators and protect the uniformed laity, if possible.

Any person giving electrotherapy should be under the direct supervision of a physician, and in giving such treatment he is in the same class as the nurse in executing the orders of the physician. The United States Public Health Service, under the civil service, requires certain preliminary education, with two or three years training under recognized teachers in physiotherapy, attaining the title of physiotherapy aide and assistant. All work done by the physiotherapy aide or assistant is under the direct supervision of a physician.

Membership in the Association by Districts is as follows:

May 17, 1926

Aberdeen, First District.....	71
Watertown, Second District.....	30
Madison, Third District.....	12
Pierre, Fourth District.....	8
Huron, Fifth District.....	24
Mitchell, Sixth District.....	38
Sioux Falls, Seventh District.....	53
Yankton, Eighth District.....	36
Black Hills, Ninth District.....	38
Rosebud, Tenth District.....	11
Kingsbury, Eleventh District.....	14
Whetstone Valley, Twelfth District.....	10
Total Membership	345

Respectfully submitted,

J. F. D. Cook, Secretary.

Dr. Alway moved that the report be accepted as read.

Motion seconded and carried.

REPORT OF THE COMMITTEE ON CHILD WELFARE

The Secretary presented the following report, which had been sent to him by the Chairman:

The physical examinations of the boys and girls of the Farm Clubs, as reported last year, was repeated at the State Fair in 1925. At that time 216 were examined. Fourteen have reported correction of remediable defects, and twenty-six will have corrections when school closes. In 1924, 186 were examined and 81, or 44.3 per cent, have had corrections. The following doctors gave their services at the State Fair Clinics:

GENERAL PHYSICAL

Dr. J. C. Shirley.....	Huron
Dr. G. W. Potter.....	Redfield
Dr. Jean Jongewaard, Div. of Child Hygiene.....	
Dr. G. B. Irvine.....	Lake Preston
Dr. A. E. Bostrom (Two days).....	Lake Preston
Dr. B. M. Christianson.....	Toronto
Dr. G. H. Langsdale.....	Highmore

ORTHOPEDIC

Dr. H. D. Sewell.....	Huron
Dr. R. C. Murdy.....	Aberdeen
Dr. T. F. Ballard (Two days).....	Yankton
Dr. D. R. Jones.....	Rapid City
Dr. N. K. Hopkins.....	Arlington
Dr. Guy VanDemark.....	Sioux Falls
Dr. B. H. Sprague.....	Huron

EAR, NOSE AND THROAT

Dr. E. W. Feige.....	Huron
Dr. H. L. Saylor.....	Huron
Dr. J. B. Gregg.....	Sioux Falls
Dr. B. H. Taylor.....	Huron

DENTAL

Dr. E. H. Bryan.....	Huron
Dr. B. H. Kerr.....	Huron
Dr. C. K. Walker.....	Huron
Dr. L. Calverly.....	Wessington Springs

EYE

Dr. H. L. Saylor.....	Huron
Dr. J. D. Alway.....	Aberdeen
Dr. E. W. Feige.....	Huron
Dr. E. D. Putnam.....	Sioux Falls

Following the survey of crippled children made last year, 35 children were examined by Dr. Emil S. Geist, of Minneapolis, at the meeting of the South Dakota State Medical Association in Sioux Falls, 20 of whom were present before the Association. Of the indigent children reported, 15 received treatment last year at the expense of the State, the surgical work having been done without charge. On May 11, 1926, at the invitation of the State Division of Child Hygiene, Dr. Geist held another clinic for crippled children at DeSmet, in connection with the Kingsbury Medical Society. At that time 40 patients were examined.

Dr. Goldie E. Zimmerman, member of the Committee from Sioux Falls, has held children's clinics every two weeks in East Sioux Falls. Indigents were cared for at the clinics, and the others were referred to their family physicians.

At the clinics for the examination of infants and pre-school children held throughout the state during the summer of 1925 by the Division of Child Hygiene, the physicians of the state co-operated splendidly, and many of them assisted for a part of the day. A detailed report of this work will be sent to any physician, upon request, by the State Board of Health.

Many of the physicians of the Association gave May Day for the examination of children who will start to school next fall. The reports of this work are not yet completed.

Last year a request was made of each member of the Committee for suggestions regarding the work of the Committee. The only suggestion received was that a plan be worked out whereby free Schick tests and permanent immunization to diph-

theria could be given to as many of the pre-school and school children of the state as possible. No action has been taken, but during the coming year, with the addition of an epidemiologist to the State Board of Health, it is hoped that this work can be started. Further suggestions are invited.

Respectfully submitted,

CLARA E. HAYES, M.D., Chairman
N. K. HOPKINS, M.D.
GOLDIE E. ZIMMERMAN, M.D.

Dr. Grosvenor moved that the report be accepted as read.

Motion seconded and carried.

COMMITTEE ON NECROLOGY

The Secretary presented the following report, which had been submitted by the Chairman:

WHEREAS, an all-wise Providence has called from our midst during the past year six honored and respected members of our profession and this Association, namely,

Dr. Luther L. Rewalt.....	Madison
Dr. George E. Abbott.....	Watertown
Dr. Hamilton H. Wilcox.....	Hot Springs
Dr. Fred B. McGarvey.....	Cavour
Dr. J. L. Harris.....	Webster

and that sterling pioneer of the profession in this state, long a member of our State Board of Medical Examiners, which he served faithfully and well, Dr. John William Freeman, of Lead, and

WHEREAS, it is most desirable for us to express a deep and sincere feeling of loss on the part of the members of this Association, and our appreciation of the efforts and example of each and every one of them, therefore be it

RESOLVED by the South Dakota State Medical Association, at its Forty-fifth Annual Session convened, that this Association has suffered a real loss in the death of these six members, and that they have left to this Association an heritage of worth and merit that can never be fully expressed. And be it further

RESOLVED, in further appreciation of our departed members, that this resolution be spread upon the records of the Association, and a copy furnished to the family of each of these, our beloved fellows in the profession.

Respectfully submitted,

S. M. HOFF, M.D., Chairman,
J. H. LLOYD, M.D.,
S. A. KELLER, M.D.

Dr. Hohf moved its adoption.

Motion seconded and carried.

COMMITTEE ON CONSERVATION OF VISION

Dr. L. G. Hill, Chairman, presented the report of this Committee, which was read by title and ordered published with the minutes.

CONSERVATION OF VISION—Exhibit A

One of the most important movements which, during the last few years, has occupied the attention of physicians, political economists, social workers,

and others interested in public welfare, is that which concerns itself with the prevention of disease.

It has been recognized that none of the movements looking towards the conservation of valuable utilities compares in importance with the saving of human life and the preservation of human efficiency, and among these the preservation of useful sight is one of the most important.

While through preventable causes resulting in death, the individual is removed from the sphere of social activities, should he lose his sight he is, in the majority of instances, not only no longer able to maintain himself independently, but, as a rule, this is associated with normal health and he may live for many years dependent upon others. Moreover, there is no calamity that is more deplorable than that resulting from blindness.

More than a quarter of a century ago it was shown that nearly half of existing blindness was due to conditions which might have been prevented, and careful investigations in recent years have shown that this estimate has not been exaggerated. It is, therefore, of great importance, both from an economic and humane standpoint, that measures should be instituted, whenever possible, to prevent such destruction of human eyes as will result in blindness or diminution of sight so materially as seriously to interfere with the useful occupation and comfort of one so afflicted.

In 1910 it was estimated that the total number of blind persons in the United States was not less than 118,000. In our use of the word "blindness" the term will be considered to include all those cases in which the sight is so diminished as to preclude the use of the eyes for any practical purpose.

While there are a number of causes of blindness occurring in infancy, only the important ones will be considered for the moment.

The congenital cases include those born into the world blind, and those born with a condition of the eyes which leads to blindness not yet developed. These conditions are the result of constitutional diseases of a specific nature which a diseased parent transmits to the offspring.

Ophthalmia neonatorum, as we all know, is a condition occurring a few days after birth. At one time it was a frequent thing for children to have it, because the cause and prevention were unknown. In this day there is little excuse for this disease, as silver in certain forms will prevent the propagation of any gonococci present.

Ophthalmia neonatorum is responsible for about 20 per cent of the blind in the United States and for about 25 per cent of the inmates of the blind asylums.

Every case occurring shows carelessness somewhere. Either the mother was not properly prepared for delivery or the silver preparation was not used or was at least improperly used. Every physician must insist upon the use of this ounce of prevention in every single case he attends, no matter how high or lowly the patient. It is not infrequent to see children of the rich suffering from this condition because the attending physician thought he might offend by using the silver in the new-born infant.

It costs about \$30 a year to educate an ordinary child, and about \$400 a year to educate and care for a blind child. This does not take into consider-

ation the many financial and sociological sidelights to blindness, and the personal and state misfortunes incident to blindness, and unproductive citizenship.

There are about fifty blind schools in the United States, costing about \$2,000,000 a year to maintain.

The Cr  d   treatment for all new-born children would almost entirely eliminate ophthalmia neonatorum and its dreadful consequences from the world.

The use of this evidently necessary treatment is by no means universal, and its omission is not confined to midwives. Some reputable physicians use it invariably; others never use it; still others use it when conditions are suspicious. In order to accomplish its purpose the use of this treatment should be invariable. It should become recognized as an integral part of a woman's confinement and as a reliable provision against blindness. It should be understood that gonorrhea is not the only condition that will produce this disease, but that it may occur from other and non-disgraceful causes.

In this state where most confinements are attended by a physician and where mid-wives are not commonly employed there should not be a single case of disastrous results to the vision of a new-born child. The law here, as elsewhere, provides for the invariable use of Cr  d  s prophylaxis in all new-born infants, and such laws should be rigidly observed.

It is not only necessary that the nitrate of silver be dropped into the eyes, but that the physician or nurse should see to it that the drug comes in contact with every part of the conjunctiva. This may be accomplished by slightly massaging or moving the lids to allow the drug to enter the more remote parts of the ocular conjunctiva. Incidentally, this is true in treating any condition of disease in children's eyes, as it so often happens that the eyes close so tightly that the one or two drops of medicine dropped in the eyes is forced out and kept from producing the desired effect because it is not worked in and about the eye.

Malnutrition in children leads to development of pathologic conditions in all parts of the body and of course the eyes are prone to changes. You all know and recognize the rather severe conjunctivitis attending these cases. It may be so marked that ulcers will appear on the cornea, and, if not relieved promptly, other ulcers occur and finally form scars of such density as to ruin the sight forever, even though the underlying structures may be good. This condition is often brought on by improper nourishment. The eyes respond very quickly when the general condition is remedied. If neglected too long, permanent changes take place in the cornea, and subsequent treatment is of little value as far as restoration of vision is concerned. Such eyes must be saved in the beginning. All such cases of blindness may be prevented. Plenty of good substantial food, fresh air, milk, and a little iron and arsenic work wonders. A Wassermann test should be taken in all such cases. Do you ever find a healthy, robust person applying for examination of the eyes because of gradual impairment of vision? The ophthalmoscope sometimes shows extensive retinal changes, evidences of kidney lesions, heart affections, and chronic sepsis from focal infections. If taken in time the underlying cause may generally be removed, and the changes in the eyes stop.

Opticians are sometimes responsible for cases of

blindness because they cannot recognize pathologic conditions, and spend months trying to improve the sight by changing glasses, and finally when the patient is nearly blind they have the patient consult an oculist.

One of the most important measures in the conservation of vision is proper examination and care of the eyes of school children. This must be shared by the parents, the medical profession, boards of education, and boards of health.

First, there would be the detection and correction of visual defects. Second, the detection and treatment of eye diseases. Third, the establishment of facilities for children who, after having eyes corrected or treated are unable under ordinary classroom conditions to see properly. The most competent authorities say that the most complete and effective method of determining diseases and defects in the eyes of school children is through an examination by an ophthalmologist, and where needed the establishment of conservation-of-vision classes.

The importance of good sight in school children cannot be overestimated. In addition to actual suffering, defective vision interferes with the usual educational procedure and may result in mental retardation and juvenile delinquency. Some reports state that 60 per cent of all school children suffer the handicap of defective vision. An interesting fact about these reports is that the rural districts generally report a larger percentage of defective vision than the city districts. Myopia is the only error of vision that seems to be easily recognized among school children, while hyperopia or astigmatism which may be fully as grave are not so easily detected, but may lead to as much suffering and interfere even more with the progress of the child.

It is not to be expected that the teacher or the school nurse is able correctly to diagnose or to discover all errors of refraction. And without a thorough and scientific examination systematically carried out, many errors will be overlooked.

A large proportion of defective vision and blindness is due to accidents and neglect of prompt and proper treatment. Accidents occur most frequently to children as a result of the careless use of scissors, forks, toy pistols, air rifles, bow and arrows, etc.

The simplest means of preventing such accidents is in giving less harmful utensils and playthings to children. Until recently the Fourth of July fireworks added largely to the number of needlessly blinded children. Fortunately, we are learning saner forms of patriotism, and accidents to the eyes from this source are rapidly decreasing.

An eye badly injured may look natural. Delay in seeking expert aid may result in the loss of sight. If the accident seems serious, gently bandage the eyes with a clean handkerchief. Be sure that both eyes are bandaged in order that the injured eye may be kept quiet, and keep the patient at rest until the physician arrives. An injured eye, even if it ceases to be painful after a day or so, should be considered a sufficiently serious matter to receive attention of the oculist at once. If it is thought to be unimportant because of not being painful, and nature is left to take its course, it is possible that the injured eye will affect the good one. Sometimes, before there is any warning by

pain or poor vision in the good eye, the time will have passed when treatment of the injured eye might have saved sight in the good eye.

Children at play frequently get sand, small insects, or cinders in the eye. This need not be serious if proper measures for removing the foreign body are observed. Do not allow the child to rub the eye. This only increases the pain and tends to imbed the foreign body more firmly. Instead, grasp the eyelashes and hold the eyelids away from the eye, as this often will allow the tears to wash the foreign body away. If this is unsuccessful, carefully turn the eyelid over and wipe away the foreign matter with the corner of a clean, soft cloth. If it is not easily removed, consult a physician or oculist, as it is a very easy matter for untrained persons seriously to injure the eye in attempting to remove an irritating foreign body.

No one denies the importance of focal infection, and yet many eyes are sacrificed because of this important factor of the pathologic conditions in the eye.

Diseased tonsils, abscessed teeth, pyorrhea, chronic sinusitis are the usual foci of infection. Some are so pronounced that a layman could make a diagnosis and still some physicians scoff at the idea of cleaning up these foci, and say that in this day and age specialists are too radical and want to operate too often. It is remarkable the rapidity with which some cases of defective vision clear up after the removal of the tonsils and adenoids.

Industrial plants are doing much to prevent cases of blindness. Little time is lost in having injuries attended to, which, of course, lessens the possibility of infection and the loss of sight. Men are also supplied with goggles and safety devices.

Trachoma, or granulated lids, is an infective conjunctivitis characterized by its exceedingly chronic course and the formation of follicles in the conjunctiva, which look like the eggs of frog spawn, with scar tissue. Some of the bodies are two or three times as large as a pin-head. They are translucent and appear gelatinous, but are hard to the touch. This disease is frequently spoken of as the Egyptian disease because it is most common in Egypt and in other sandy countries and was brought to Europe by soldiers returning from Egypt.

The cause of trachoma is not known definitely. It is frequently transmitted by towels, handkerchiefs, and other articles that have been infected by an individual suffering from the disease. When one member of the family is infected usually all are infected sooner or later; the infection taking place through the common towels, playthings, washbasins, etc. Not long ago it was common for thrashers and other workmen, one or two of whom had trachoma, to leave a trail of trachoma cases behind them wherever they went.

Trachoma is an exceedingly serious condition. It is so serious as to prevent the entrance of aliens into the United States if they are suffering with it. It is a serious disease because it has a great tendency to involve the eyeball, producing serious inflammatory conditions in the interior of the eye and ulcerations of the cornea. It also produces deformities of the lid; especially is it liable to result in the production of what is called ectropion, or turning out of the margin of the lid.

The treatment of trachoma is mainly preventive.

Every individual suffering from trachoma should be careful to use his own towels and handkerchiefs, and should have an individual wash basin. Children should not play with toys handled by a trachomatous patient. The greatest care is necessary to prevent infection of those with whom the sufferer comes in contact.

Every case of chronic conjunctivitis should be suspected as being a case of trachoma until it has been shown by medical examination that it is not. The medical treatment of trachoma usually requires months of time. It is essential that the patient suffering from this disease should be encouraged to continue active treatment until his eyes are well or made as nearly well as they can be made, and until he is no longer a menace to the community in which he lives.

The many clinics for the examination of school and other young children, held in every section of the state, under the direction of country nurses, Red Cross Societies, etc., are doing much for conservation of vision in directing attention to faulty conditions of vision and unsanitary habits and other causes of ill health, and advising proper care and treatment. All these agencies when properly directed should be encouraged and extended, as "an ounce of prevention is worth a pound of cure."

The extension of information so common to-day through the press and periodicals easily within the reach of everyone, together with the advice and co-operation of physicians, school and country nurses, and all similar agencies to direct the education of adults and children, is our greatest force to build up a happy and healthy race and make popular the inherent right of every child and adult to a perfect body and normal vision.

Respectfully submitted:

L. G. HILL, M.D., Chairman,
L. N. GROSVENOR, M.D.,
J. A. HOHF, M.D.,
E. A. PITTENGER, M.D.

May, 1926

APPOINTMENT OF COMMITTEES

COMMITTEE ON NOMINATIONS

President Ball appointed the following gentlemen to serve on this Committee:

E. A. Pittenger, M.D. Aberdeen
J. B. Vaughn, M.D. Castlewood
Charles C. Hoagland, M.D. Madison
T. B. Smiley, M.D. Mt. Vernon
J. A. Hohf, M.D. Yankton
J. C. Waterman, M.D. Burke
G. H. Lowthian, M.D. Milbank

COMMITTEE ON RESOLUTIONS

President Ball appointed the following gentlemen to serve on this Committee:

C. E. McCauley, M.D. Aberdeen
F. D. Gillis, M.D. Mitchell
C. S. Langly, M.D. Yankton

COMMITTEE ON NECROLOGY

President Ball appointed the following gentlemen to serve on this Committee:

H. W. Sherwood, M.D. Doland
J. R. Westaby, M.D. Madison
A. E. Bostrom, M.D. DeSmet

On motion, the House of Delegates adjourned at 1:15 P. M., to reconvene on Thursday at 12:30 P. M.

SECOND MEETING—THURSDAY, MAY 20, 1926

The second meeting of the House of Delegates was called to order at the Hotel Sherman, Aberdeen, at 12:45 P. M., on Thursday, May 20, 1926, by the President, Dr. W. R. Ball, Mitchell.

The following Councilors and Delegates were present:

COUNCILORS

FIRST DISTRICT

R. D. ALWAY, M.D. Aberdeen

SECOND DISTRICT

H. W. SHERWOOD, M.D. Doland

THIRD DISTRICT

B. T. GREEN, M.D. Brookings
(Substituting for Dr. J. R. Westaby)

FOURTH DISTRICT

A. A. McLAURIN, M.D. Pierre

FIFTH DISTRICT

L. N. GROSVENOR, M.D. Huron

SIXTH DISTRICT

FREDERICK TREON, M.D. Chamberlain

SEVENTH DISTRICT

G. G. COTTAM, M.D. Sioux Falls
(Substituting for R. W. Mullen)

EIGHTH DISTRICT

J. P. ISAAC, M.D. Freeman

TENTH DISTRICT

J. C. WATERMAN, M.D. Burke

ELEVENTH DISTRICT

A. E. BOSTROM, M.D. DeSmet

TWELFTH DISTRICT

P. D. PEABODY, M.D. Webster

HOUSE OF DELEGATES

FIRST DISTRICT

C. E. McCAULEY, M.D. Aberdeen
E. A. PITTENGER, M.D. Aberdeen

SECOND DISTRICT

J. B. VAUGHN, M.D. Castlewood

FOURTH DISTRICT

A. A. McLAURIN, M.D. Pierre

FIFTH DISTRICT

O. R. WRIGHT, M.D. Huron

SIXTH DISTRICT

R. G. WILLY, M.D. Mitchell
J. H. LLOYD, M.D. (Substituting) Mitchell

SEVENTH DISTRICT

P. E. BRANDON, M.D.....Sioux Falls

EIGHTH DISTRICT

S. M. HOHF, M.D. (Substitute).....Yankton

J. A. HOHF, M.D. (Substitute).....Yankton

NINTH DISTRICT

N. T. OWEN, M.D.....Rapid City

W. E. MORSE, M.D.....Rapid City

TENTH DISTRICT

J. C. WATERMAN, M.D.....Burke

ELEVENTH DISTRICT

C. A. BUTLER, M.D.....Lake Preston

TWELFTH DISTRICT

G. H. LOWTHIAN, M.D.....Milbank

President Ball, Secretary Cook, and the Vice-Presidents.

REPORT OF THE COMMITTEE ON
HOSPITALS

The Secretary presented the following report, which had been submitted by the Chairman:

There are five standardized hospitals of 100 or more beds in South Dakota, as follows:

Chamberlain Sanitarium and Hospital.....	Chamberlain
McKenna Hospital.....	Sioux Falls
Methodist State Hospital.....	Mitchell
Sacred Heart Hospital.....	Yankton
St. Luke's Hospital.....	Aberdeen

There are nine standardized hospitals of from fifty to 100 beds, as follows:

Bartron Hospital.....	Watertown
Lincoln Hospital.....	Aberdeen
Luther Hospital.....	Watertown
Lutheran Hospital.....	Hot Springs
Moe Hospital.....	Sioux Falls
New Madison Hospital.....	Madison
Peabody Hospital.....	Webster
St. Joseph's Hospital.....	Mitchell
St. Mary's Hospital.....	Pierre

There are fifty-eight hospitals in the State of South Dakota.

Your Committee recommend encouragement and standardization, or legislation directing inspection and licensing of hospitals of a prescribed standard, as determined by a suitable board or the State Board of Health.

E. W. JONES, M.D., Chairman.

Dr. Cook moved that the report be adopted.

Motion seconded and carried.

COMMITTEE ON NOMINATIONS

The Secretary presented the following report, which had been submitted by the Chairman:

We beg leave to submit the following nominations for officers of the South Dakota State Medical Association for 1926-1927:

President—Dr. T. F. Riggs, Pierre.
First Vice-President—Dr. S. M. Hohf, Yankton.
Second Vice-President—Dr. N. K. Hopkins, Arlington.
Third Vice-President—Dr. L. N. Grosvenor, Huron.

COUNCILORS

First District—Dr. R. D. Alway, Aberdeen.
Second District—Dr. H. W. Sherwood, Doland.
Fourth District—Dr. A. A. McLaurin, Pierre.
Eighth District—Dr. J. P. Isaac, Freeman.
Ninth District—Dr. F. W. Minty, Rapid City.
Councilors from other districts hold over.
The 1927 convention of this Association to be held in Huron, South Dakota.

Respectfully submitted,

E. A. PITTINGER, M.D., Chairman.
J. B. VAUGHN, M.D.
C. C. HOAGLAND, M.D.
T. B. SMILEY, M.D.
J. C. WATERMAN, M.D.
J. A. HOHF, M.D.
G. H. LOWTHIAN, M.D.

Dr. S. M. Hohf moved that the report be accepted, the nominations closed, and the Secretary instructed to cast a unanimous ballot for these nominees.

Motion seconded by Dr. P. E. Brandon and unanimously carried.

The Secretary reported the ballot cast, and the President declared these gentlemen duly elected.

REPORT OF COMMITTEE ON LEGISLATION
AND PUBLIC POLICY

Dr. R. D. Alway, Chairman, made the following oral report:

We wish to recommend that we have a lobbying fund for the Legislature next winter, the same as we have had in former years, the fund not to exceed \$300.00. We will ask the Secretary to take this up with the Board of Councilors, and ask them to approve of this appropriation.

Another matter the Committee considered was the Workman's Compensation Act. Dr. McLaurin has put some time on this, and finds that most physicians feel that \$150.00 is not sufficient for hospital and medical attention to these men. He has also found that this could be increased to \$150.00 for hospital fees and \$150.00 for medical attention at an additional expense of only 2 per cent; that is, if it now costs \$1.00 under the present plan it would cost only \$1.02 if it was increased in this way.

Dr. McLaurin explained the amendment that is in force in other states, and said that the insurance companies were in favor of a law which stated a definite amount.

Upon motion duly seconded and carried this report was accepted as given.

NEW BUSINESS

Dr. McCauley stated that Dr. Hayes thought it would be well for the Association to go on record

recommending a special course in health and hygiene in every teachers' training-school.

He moved that the Association recommend to the Board of Regents that in due time a course in health and hygiene be established in every State School for the instruction of teachers.

Motion seconded and carried.

Dr. Wright stated that there were many irregular physicians throughout the state who violated the ethics of the profession in practicing without a license, running electric baths, etc., and he thought it was the duty of the Health Officer to file protests against these people and have them put out of business. He thought this should be a duty incorporated in the law for Superintendents of County Boards of Health.

Dr. Isaac said he had brought this matter before the Superintendent of the County Board of Health two years ago, but had not received a reply.

Secretary Cook explained that in line with the prosecution of the illegal practice of medicine such complaints must go through the office of the District Attorney, who must have a definite complaint and start the action. He had recently received a decision from the office of the Attorney-General stating that if the County authorities did not take it up they would.

Dr. Wright recommended that this be taken up by the Legislative Committee, and that it be incorporated in the State law and made the duty of the County Superintendents, if brought to their attention.

Secretary Cook did not think this advisable, and stated that if anyone had a definite, *bona fide* complaint, and could prove their case, he would sign the complaint.

As this concluded the business before the House of Delegates, on motion, duly seconded and carried, the meeting adjourned at 1:10 p. m., *sine die*.

J. F. D. COOK, M.D., Secretary.

REPORT OF THE COUNCIL

FIRST MEETING—WEDNESDAY, MAY 19, 1926

The Board of Councilors was called to order on Wednesday, May 19, 1926, at 1:20 p. m., at the Hotel Sherman, Aberdeen, by the Chairman, Dr. Frederick Treon, Chamberlain.

The following Councilors were present:

FIRST DISTRICT

R. D. ALWAY, M.D.....Aberdeen

SECOND DISTRICT

H. W. SHERWOOD, M.D.....Doland

THIRD DISTRICT

J. R. WESTABY, M.D.....Madison

FOURTH DISTRICT

A. A. McLAURIN, M.D.....Pierre

FIFTH DISTRICT

L. N. GROSVENOR, M.D.....Huron

SIXTH DISTRICT

FREDERICK TREON, M.D.....Chamberlain

SEVENTH DISTRICT

L. G. HILL, M.D.....Sioux Falls
(Substituting for Dr. R. W. Mullen)

EIGHTH DISTRICT

J. P. ISAAC, M.D.....Freeman

TENTH DISTRICT

J. C. WATERMAN, M.D.....Burke

ELEVENTH DISTRICT

A. E. BOSTROM, M.D.....DeSmet
President Ball, Secretary Cook, and several Delegates were also present, as well as the Vice-Presidents.

REPORT OF THE TREASURER

Dr. J. F. D. Cook presented the following report of the Treasurer:

Receipts

1925

June, From R. D. Alway, former Treasurer	\$2,367.50
June 3, From R. A. Kelly, Secretary No. 6	4.00
June 4, From D. A. Gregory, Secretary No. 7	24.00
June 6, From D. A. Gregory, Secretary No. 7	4.00
June 8, From O. King, Secretary No. 1	4.00
July 20, From H. T. Kenney, Secretary No. 2	4.00
July 27, From J. A. Hohf, Secretary No. 8	4.00
Aug. 6, From O. King, Secretary No. 1	4.00
Aug. 26, From O. King, Secretary No. 1	4.00
Sept. 5, From O. King, Secretary No. 1	4.00
1926	
Feb. 8, From O. King, Secretary No. 1	4.00
Feb. 8, From O. King, Secretary No. 1	4.00
Mar. 5, From B. A. Dyar, Secretary No. 11	48.00
Feb. 12, From G. H. Lowthian, Sec'y No. 12	36.00
Mar. 20, From J. R. Westaby, Sec'y No. 3	52.00
Mar. 25, From R. V. Overton, Sec'y No. 10	40.00
Mar. 27, From J. A. Hohf, Secretary No. 8	132.00
Mar. 29, From H. T. Kenney, Sec'y No. 2	112.00
Mar. 30, From B. A. Dyar, Secretary No. 11	8.00
April 1, From R. V. Overton, Sec'y No. 10	4.00
April 1, From J. L. Stewart, Secretary No. 9	132.00
April 4, From H. T. Kenney, Secretary No. 2	4.00
April 14, From H. B. Martin, Sec'y No. 4	32.00
April 14, From J. L. Stewart, Sec'y No. 9	20.00
April 14, From H. T. Kenney, Sec'y No. 2	4.00
April 14, From J. A. Hohf, Secretary No. 8	12.00
April 24, From J. F. Tobin, Secretary No. 6	136.00
April 24, From L. J. Pankow, Sec'y No. 7	212.00
April 27, From L. G. Fitzgibbon	96.00
May 10, From J. L. Stewart, Secretary No. 9	4.00
May 14, From J. F. Tobin, Secretary No. 6	16.00
May 17, From J. L. Pankow, Secretary No. 7	16.00
May 17, From J. F. Adams, Secretary No. 1	272.00
May 17, From J. F. Adams, Secretary No. 1	4.00
May 19, From J. F. Adams, Secretary No. 1	8.00
May 19, From G. H. Lowthian, Sec'y No. 12	4.00

Total Receipts\$3,835.50

Disbursements		
1925		
June 13, Journal-Lancet, January 25 to June 30, 1925.....	\$357.00	
July 14, Cleveland Printing Company.....	3.25	
July 31, J. F. D. Cook, June and July.....	100.00	
Aug. 12, V. E. Farrar, supplies.....	1.85	
Aug. 12, Express, stationery	1.22	
Sept. 3, A. M. A. Membership blanks.....	1.25	
Sept. 3, Cleveland Printing Co., letterheads.....	38.25	
Sept. 3, Irene H. Snyder	265.25	
Sept. 19, Cleveland Printing Company.....	3.50	
Oct. 5, Cleveland Printing Co.	2.25	
Oct. 5, J. A. Hawkins, P. M., stamped envelopes	11.34	
Oct. 5, J. F. D. Cook, August and September	100.00	
Oct. 8, F. R. Harding	2.50	
Oct. 9, Secretary, Sioux Falls Delegate.....	73.95	
Oct. 9, H. Barse, stamps	3.96	
Dec. 10, McDonald Flower Shop, Freeman.....	3.00	
Dec. 12, Journal-Lancet, July 1 to December 31, 1925	345.00	
Dec. 24, J. F. D. Cook, Secretary-Treasurer 1926	50.00	
Feb. 3, Cleveland Printing Company, cards.....	17.50	
Feb. 26, McDonald Flower Shop, Freeman.....	5.00	
March 5, A. M. A. Examination blanks.....	12.15	
March 12, L. Miles, P.M., 500 stamps.....	10.00	
March 1, L. Miles, P. M., stamped envelopes	18.66	
April 28, The Lilly Company, badges.....	36.50	
April 28, L. Miles, stamped envelopes.....	14.59	
April 29, J. F. D. Cook, Secretary-Treasurer	100.00	
May 6, Programs	90.00	
May 18, J. F. D. Cook, Secretary-Treasurer	250.00	
May 18, H. Barse, stamps	12.60	
Total Disbursements		\$1,930.57
Total receipts		\$3,835.50
Total disbursements		1,930.57
Balance on hand		\$1,904.93
		\$1,904.93
		\$3,835.50

Respectfully submitted
J. F. D. Cook, M.D., Treasurer.

Chairman Treon appointed an Auditing Committee consisting of Dr. A. A. McLaurin, Pierre; Dr. J. P. Isaac, Freeman; and Dr. J. R. Westaby, Madison, to audit the accounts of the Treasurer.

Dr. R. D. Alway: I think we should raise the dues of the Society. The funds have been becoming depleted since we reduced them three years ago. The present dues are \$4.00, and I think they should be made high enough so that we may have a little fund with which to meet emergency expenses. I think a raise of \$1.00 will keep us going for a while.

Dr. L. C. Hill, Sioux Falls, moved that the dues be raised to \$5.00.

Motion seconded by Dr. A. A. McLaurin, and after some discussion put to a vote and unanimously carried.

The Secretary brought up the matter of the proposed changes in the Harrison Narcotic Act, and read a letter from the Executive Secretary of the Bureau of Legal Medicine and Legislature of the American Medical Association concerning Senate Bill S4085, and an editorial from the *Journal of the American Medical Association*.

Dr. L. C. Hill, Sioux Falls, moved that the Board of Councilors go on record as opposing the enactment of the bill.

Motion seconded by Dr. A. A. McLaurin, and after some discussion was put to a vote and unanimously carried.

The Chairman requested the Secretary to draft the opinion of the Councilors and present it at the meeting on Thursday.

The Chairman brought up the question of paying the bill presented by the Sioux Falls District Society for the 1925 meeting.

After some discussion Dr. H. W. Sherwood, Doland, moved that the matter be laid on the table until the next meeting.

Motion seconded, and after some discussion was put to a vote and unanimously carried.

There being no further business before the Council at this time, the meeting was declared adjourned at 2:00 P. M., to reconvene on Thursday.

SECOND MEETING—THURSDAY, MAY 20, 1926

The second meeting of the Board of Councilors was called to order on Thursday, May 20, 1926, at 1:15 P. M., at the Hotel Sherman, by the Chairman, Dr. Frederick Treon, Chamberlain.

The following Councilors were present:

FIRST DISTRICT	
R. D. ALWAY, M.D.....	Aberdeen
SECOND DISTRICT	
H. W. SHERWOOD, M.D.....	Doland
THIRD DISTRICT	
B. T. GREEN, M.D.....	Brookings
(Substituting for Dr. J. R. Westaby)	
FOURTH DISTRICT	
A. A. McLAURIN, M.D.....	Pierre
FIFTH DISTRICT	
L. N. GROSVENOR, M.D.....	Huron
SIXTH DISTRICT	
FREDERICK TREON, M.D.....	Chamberlain
SEVENTH DISTRICT	
G. G. COTTAM, M.D.....	Sioux Falls
(Substituting for Dr. R. W. Mullen)	
EIGHTH DISTRICT	
J. P. ISAAC, M.D.....	Freeman
TENTH DISTRICT	
J. C. WATERMAN, M.D.....	Burke

ELEVENTH DISTRICT

A. E. BOSTROM, M.D.....DeSmet

TWELFTH DISTRICT

P. D. PEABODY, M.D.....Webster
President Ball, Secretary Cook, and several Delegates were likewise present, as well as the Vice-presidents.

Dr. A. A. McLaurin, Chairman, reported that the Auditing Committee had examined the accounts of the Secretary-Treasurer and found them correct in every detail.

Dr. R. D. Alway moved that the report of the Treasurer and the report of the Auditing Committee be accepted and filed.

Motion seconded and unanimously carried.

The Secretary presented the following resolution regarding the proposed changes in the Harrison Narcotic Act:

THE HARRISON NARCOTIC ACT

WHEREAS, For the purpose of "strengthening" the Harrison Narcotic Act, a bill has been introduced into Congress limiting the right of physicians to use narcotics, imposing additional duties on them with respect to such narcotics as they may lawfully use, and greatly increasing the penalty for violations of the act, intentional or unintentional, which is an additional burden upon the physicians of the State.

The medical profession yields to no class in its willingness to submit to burdens calculated to diminish narcotic drug addiction. Evidence is not available, however, to show that the burdens proposed by this bill would diminish narcotic addiction. Therefore, be it

RESOLVED, That the South Dakota State Medical Association instruct its Secretary to communicate with the President of the United States, sending a copy of the resolution.

BE IT FURTHER RESOLVED, That the Secretary forward a copy of these resolutions to the United States Legislators from South Dakota, asking them to oppose this measure, and that he forward a copy to each member of the Association asking them to write to the United States Legislators from South Dakota to oppose this measure.

S. D. State Medical Association,

J. F. D. COOK, M.D.,

Secretary-Treasurer.

Dr. R. D. Alway moved that the resolution be adopted as read.

Motion seconded and carried.

The Secretary called attention to the fact that, as Dr. L. N. Grosvenor had been elected third vice-president, it was necessary to elect a new Councilor from the Fifth District.

Dr. L. N. Grosvenor nominated Dr. O. R. Wright to complete his unexpired term.

Dr. G. G. Cottam seconded the nomination, and moved that the nominations be closed, and

that the Secretary cast a unanimous ballot for Dr. Wright.

Motion seconded and carried.

The Secretary reported the ballot cast and the Chairman declared Dr. Wright duly elected.

Dr. R. G. Willy stated that at its last meeting the Mitchell District Society instructed its delegates to ask that a change be made in the official organ publication, from THE JOURNAL-LANCET to *Minnesota Medicine*.

After considerable discussion Dr. L. N. Grosvenor moved that the relations with THE JOURNAL-LANCET be continued as at present.

Motion seconded by Dr. G. G. Cottam, and carried.

Dr. R. D. Alway, on behalf of the Committee on Legislation and Public Policy, moved that, if necessary, an amount not to exceed \$300.00 be appropriated for lobbying purposes during the meeting of the Legislature in the winter.

Seconded by Dr. G. G. Cottam and carried.

Dr. T. F. Riggs stated that he had talked, unofficially, with an attorney who had said he would be willing to do whatever work was necessary in reporting on certain bills regarding hospitals and other matters pertaining to the medical profession, and that if anything came up in which the Association needed representation he would be willing to represent them if so instructed.

Secretary Cook introduced the question of the meetings of the House of Delegates and the Board of Councilors, and expressed the opinion that a regular time should be set aside preceding or following the general sessions, instead of the luncheon hour, so that matters could be considered in a more private and dignified way.

After some discussion this matter was left to the discretion of the Secretary.

Dr. G. G. Cottam moved that the question of the Sioux Falls District Society bill be taken from the table for discussion.

Motion seconded and unanimously carried

Dr. Cottam then explained the items of the bill, and after a general discussion, Dr. J. P. Isaac moved that the State Association pay the bill, with the exception of the item of \$90.00 for the banquet, the amount left being \$143.05.

Motion seconded by Dr. Cottam and carried.

Dr. Grosvenor asked whether it was the custom of the State Association to pay the expenses of the essayists and clinicians from outside the State, or whether the local society paid them.

Dr. Alway stated that the local committees had always paid the expenses of the meetings in the past.

Dr. Treon said that any bill in reason for invited guests would have his approval while he was Chairman of the Board of Councilors.

As this concluded the business before the Council the meeting was declared adjourned *sine die*.

J. F. D. Cook, M.D., Secretary.

TRANSACTIONS OF THE SCIENTIFIC MEETINGS

FIRST DAY—WEDNESDAY, MAY 19, 1926

The first meeting of the Forty-fifth Annual Session of the South Dakota State Medical Association was called to order in the Orpheum Theatre, Aberdeen, at 9:40 A. M., on Wednesday, May 19, 1926, by the President, Dr. W. R. Ball, Mitchell.

Dr. Ball then presented his Presidential address, entitled "Our Medical Association."

Dr. Edgar J. Huenekens, Minneapolis, Minn., gave a Pediatric Clinic.

Dr. Benjamin F. Lounsbury, Chicago, Illinois, gave a Surgical Clinic.

The Association adjourned at 12:10 to reconvene at 2:00 P. M.

AFTERNOON MEETING—MAY 29, 1926

The second meeting was called to order at 2:15 P. M., by the President, Dr. W. R. Ball, Mitchell.

Dr. Donald A. Nicholson, Seattle, Washington, presented a paper on "Traumatic Neuroses."

Dr. Casper W. Sharples, Seattle, Washington, addressed the Association on "Diverticulitis of the Sigmoid." (Lantern slides.)

Dr. Rollin T. Woodyatt, Chicago, Illinois, gave a Diabetic Clinic.

Dr. F. E. Clough, Lead, gave a brief Memorial Address in honor of Dr. John William Freeman.

As this concluded the program for the day the Association adjourned at 5:15 P. M., to reconvene at 9:30 A. M. Thursday.

An informal banquet and entertainment was given at the County Club during the evening.

SECOND DAY—THURSDAY, MAY 20, 1926

The third meeting was called to order at 9:40 A. M., by the President, Dr. W. R. Ball, Mitchell.

Dr. Frederick Tice, Chicago, Illinois, gave a Medical Clinic.

Dr. William R. Murray, Minneapolis, Minn., gave a clinic on "Acute External Diseases of the Eye."

The Association adjourned at 12:05, to reconvene at 2:00 P. M.

AFTERNOON MEETING—MAY 20, 1926

The fourth meeting was called to order at 2:10 P. M. by the President, Dr. W. R. Ball, Mitchell.

Dr. Maximilian Kern, Chicago, Illinois, gave an Endocrine Gland Clinic.

Secretary Cook made a brief report of the proceedings of the House of Delegates.

President Ball: I will now introduce to you our next President, Dr. T. F. Riggs, of Pierre. He lives in the geographical center of the state, so I think the wheels of the Association will run very smoothly this year. (Applause).

Dr. Riggs: Dr. Ball told me he had everything arranged for next year so that it will be very fine, but judging by the meeting of the Board of Councilors to-day there are still some rocks that we may bump into if we are not careful. I think, however, that the Society will go on growing as it has in the past. I appreciate this honor, and trust that with your help we may have a better year, if possible, than we have had even in the past. (Applause).

Dr. Merrill M. Myers, Des Moines, Iowa, gave a Heart Clinic.

As this completed the program the session was declared adjourned at 5:15 P. M., *sine die*.

J. F. D. Cook, M.D., Secretary.

DISTRICT AND COUNTY ROSTER

ABERDEEN DISTRICT MEDICAL SOCIETY—NO. 1

PRESIDENT

Kutnewsky, J. K. _____ Redfield

SECRETARY

Adams, J. F. _____ Aberdeen
 Adams, B. A. _____ Bristol
 Adams, J. F. _____ Aberdeen
 Aldrich, H. H. _____ Hitchcock
 Allen, J. M. _____ Rosholt
 Alway, J. D. _____ Aberdeen
 Alway, R. D. _____ Aberdeen
 Baer, T. H. _____ Timber Lake
 Ballard, T. F. _____ Aberdeen
 Bartholomew, G. F. _____ Timber Lake
 Bates, W. A. _____ Aberdeen
 Brenckle, J. F. _____ Northville
 Bruner, J. E. _____ Frederick
 Cook, J. F. D. _____ Langford
 Cooley, F. H. _____ Redfield
 Countryman, G. E. _____ Aberdeen
 Crain, C. F. _____ Redfield
 Crain, F. M. _____ Redfield
 Creamer, Frank H. _____ Dupree
 Deertz, J. J. _____ Brentford
 Dinsmore, W. E. _____ Claremont
 Dunn, J. E. _____ Groton
 Elward, L. R. _____ Ashton

Farrell, W. D. _____ Aberdeen
 Freyberg, F. W. _____ Aberdeen
 Gerdes, O. H. _____ Eureka
 Girard, A. G. _____ Hoven
 Hart, B. M. _____ Onida
 Hart, R. S. _____ Groton
 Herman, H. J. _____ Webster
 Hill, Robert _____ Ipswich
 Hurley, S. E. _____ Gettysburg
 Jackson, E. B. _____ Aberdeen
 Jacobey, W. K. _____ Mobridge
 Johnston, M. C. _____ Aberdeen
 Jones, T. D. _____ Bowdle
 Katz, O. W. _____ Seneca
 Keene, L. M. _____ Mellette
 King, H. I. _____ Aberdeen
 King, Owen _____ Aberdeen
 Kraushaar, F. J. O. _____ Aberdeen
 Kutnewsky, J. K. _____ Redfield
 Lavery, C. J. _____ Aberdeen
 Lowe, C. E. _____ Mobridge
 Lundquist, C. G. _____ Leola
 McCarthy, P. V. _____ Aberdeen
 McCauley, C. E. _____ Aberdeen
 Mayer, R. G. _____ Aberdeen
 Mertens, J. J. _____ Gettysburg

Miller, Frank _____ Aberdeen
 Murdy, B. C. _____ Aberdeen
 Murdy, R. C. _____ Aberdeen
 Murdy, R. L. _____ Aberdeen
 Murphy, T. W. _____ Pierpont
 Olson, C. O. _____ Groton
 Pittenger, E. A. _____ Aberdeen
 Potter, Geo. W. _____ Redfield
 Ramsey, E. T. _____ Clark
 Ranney, T. P. _____ Aberdeen
 Robbins, Emma E. _____ Aberdeen
 Rice, R. B. _____ Britton
 Schmidt, I. H. _____ Faulkton
 Seeman, C. A. _____ Tulare
 Seeman, H. J. _____ Rockham
 Senescall, C. R. _____ Veblen
 Totten, F. C. _____ Lemmon
 Twining, G. H. _____ Mobridge
 Walker, J. F. _____ Bison
 Weishaar, C. H. _____ Aberdeen
 Whitcomb, E. W. _____ Cresbard
 White, W. E. _____ Ipswich
 Whiteside, J. D. _____ Aberdeen
 Wilson, R. D. _____ Aberdeen
 Von Wohlleben, G. _____ Herreid
 Zachritz, G. F. _____ Faulkton

WATERTOWN DISTRICT MEDICAL SOCIETY—NO. 2

PRESIDENT

Haskell, A. I. _____ Clark

SECRETARY

Kenney, H. T. _____ Watertown
 Ash, J. C. _____ Garden City
 Bartron, H. J. _____ Watertown
 Bates, J. S. _____ Clear Lake
 Boutelle, L. E. _____ Indianapolis, Ind.
 Campbell, R. F. _____ Watertown
 Crawford, J. H. _____ Watertown
 Freeburg, H. M. _____ Watertown

Gross, D. W. _____ Frankfort
 Hammond, M. J. _____ Watertown
 Haskell, A. I. _____ Clark
 Hendrickson, Paul, _____ Vienna
 Johnson, A. Einar _____ Watertown
 Kenney, H. T. _____ Watertown
 Kertesz, G. J. V. E. _____ South Shore
 Koren, Finn _____ Watertown
 Lockwood, J. H. _____ Henry
 McIntyre, P. S. _____ Bradley
 Magee, W. G. _____ Watertown
 Martin, T. P. _____ Gary

Parsons, H. C. _____ Watertown
 Paulson, A. J. _____ Watertown
 Pugh, G. F. _____ Florence
 Richards, G. H. _____ Watertown
 Schwendener, J. E. _____ Bryant
 Sherwood, H. W. _____ Doland
 Smith, S. W. _____ Watertown
 Staley, F. H. _____ Vienna
 Tarbell, H. A. _____ Watertown
 Vaughn, J. B. _____ Castlewood
 Williams, C. A. _____ Doland

MADISON DISTRICT MEDICAL SOCIETY—NO. 3

PRESIDENT

Sherwood, C. E. _____ Madison

SECRETARY

Westaby, J. R. _____ Madison
 Baughman, D. S. _____ Madison

Brimmer, K. W. _____ Volga
 Green, B. T. _____ Brookings
 Hickman, G. L. _____ Bryant
 Hoagland, C. C. _____ Madison
 Jordan, L. E. _____ Chester

Kellogg, H. E. _____ Madison
 Miller, H. A. _____ Brookings
 Sherwood, C. E. _____ Madison
 Torwick, E. E. _____ Volga
 Westaby, J. R. _____ Madison
 Westaby, R. S. _____ Madison

PIERRE DISTRICT MEDICAL SOCIETY—NO. 4

PRESIDENT

Morrisey, R. J. _____ Ft. Pierre

SECRETARY

Martin, H. B. _____ Harrold

Martin, H. B. _____ Harrold
 McLaurin, A. A. _____ Pierre
 Minard, R. W. _____ Midland
 Morrisey, R. J. _____ Ft. Perre

Northrup, F. A. _____ Pierre
 Riggs, T. F. _____ Pierre
 Stout, Trent E. _____ Pierre

HURON DISTRICT MEDICAL SOCIETY—NO. 5

PRESIDENT

Buchanan, R. A. _____ Wessington

SECRETARY

Fitzgibbon, T. G. _____ Huron

Buchanan, R. A. _____ Wessington
 Burman, G. E. _____ Carthage
 Fitzgibbon, T. G. _____ Huron
 Gearhart, N. B. _____ Huron
 Gregory, D. A. _____ Miller

Griffith, W. H. _____ Huron
 Grosvenor, L. N. _____ Huron
 Hagin, J. C. _____ Miller
 Launspach, G. W. _____ Huron
 McKie, J. F. _____ Wessington
 McWhorter, Port _____ Miller
 Paddleford, J. F. _____ Miller
 Saxton, W. H. _____ Huron
 Saylor, H. L. _____ Huron

Sewell, H. D. _____ Huron
 Shirley, J. C. _____ Huron
 Sigler, G. V. _____ Highmore
 Sprague, B. H. _____ Huron
 Taylor, E. B. _____ Huron
 Thomas, Benj. _____ Huron
 Tschetter, J. S. _____ Huron
 Wood, T. J. _____ Huron
 Wright, O. R. _____ Huron

MITCHELL DISTRICT MEDICAL SOCIETY—NO. 6

PRESIDENT	
Kelly, R. A.	Mitchell
SECRETARY	
Tobin, F. J.	Mitchell
Ball, W. R.	Mitchell
Beukelman, W. H.	Stickney
Bobb, B. A.	Mitchell
Bobb, C. S.	Mitchell
Bobb, E. V.	Mitchell
Case, T. J.	Delmont
Cochran, F. B.	Plankinton
Delaney, W. A.	Mitchell
Dick, L. C.	Spencer
Doering, R. E.	Tripp

Gifford, A. J.	Alexandria
Gillis, F. D.	Mitchell
Halleck, P. P.	Letcher
Hoyle, A. H.	Salem
Hunt, Wm.	Letcher
Jenkensen, H. E.	Wess. Springs
Jones, A. L.	Corsica
Jones, E. W.	Mitchell
Kelly, R. A.	Mitchell
Kenton, Chas. B.	Artesian
Kidd, F. S.	Woonsocket
Kimble, O. A.	Murdo
Lloyd, J. H.	Mitchell
McClellan, S. A.	Kennebec
Mabee, O. J.	Mitchell

Malloy, J. F.	Mitchell
Maytum, W. J.	Alexandria
Miller, J. L.	Mitchell
Mizener, Mark	Parkston
Smiley, T. B.	Mt. Vernon
Stewart, F. H.	Kimball
Templeton, C. V.	Woonsocket
Tobin, F. J.	Mitchell
Treon, Fred	Chamberlain
Unruh, B. H.	Emery
Waldner, J. L.	Parkston
Wallis, S. R.	Armour
Willy, R. G.	Mitchell
Young, E. M.	Mitchell

SIOUX FALLS DISTRICT MEDICAL SOCIETY—NO. 7

PRESIDENT	
Roberts, W. P.	Sioux Falls
SECRETARY	
Pankow, L. J.	Sioux Falls
Billion, T. J.	Sioux Falls
Billingsley, P. R.	Sioux Falls
Bliss, P. D.	Colton
Brandon, P. E.	Sioux Falls
Cottam, G. G.	Sioux Falls
Craig, D. W.	Sioux Falls
Culver, C. F.	Sioux Falls
De Vall, F. C.	Garretson
Dickinson, W. E.	Canistota
Donahoe, S. A.	Sioux Falls
Donahoe, W. E.	Sioux Falls
Eagan, J. B.	Dell Rapids
Egan, M. H.	Sioux Falls
Fisk, R. R.	Flandreau
Gage, E. E.	Sioux Falls
Gage, A. E.	Sioux Falls

Gregg, J. B.	Sioux Falls
Grove, A. F.	Dell Rapids
Grove, M. M.	Dell Rapids
Hannon, L. J.	Hartford
Hanson, O. L.	Valley Springs
Hill, L. G.	Sioux Falls
Housman, W. Mc K.	Sioux Falls
Houw, E. M.	Lennox
Hummer, H. R.	Canton
Hyden, A.	Alcester
Jones, T. E.	Sioux Falls
Keller, S. A.	Sioux Falls
Keller, W. F.	Sioux Falls
Lierle, G. A.	Canova
Lokke, B. R.	Egan
Long, A. G.	Sioux Falls
Moe, A. J.	Sioux Falls
Mullen, R. W.	Sioux Falls
Nessa, N. J.	Sioux Falls
Nilsson, F. C.	Sioux Falls
Pankow, L. J.	Sioux Falls

Parke, L. L.	Canton
Perkins, E. L.	Sioux Falls
Putnam, E. D.	Sioux Falls
Putnam, F. I.	Sioux Falls
Reagan, R.	Sioux Falls
Rider, A. S.	Flandreau
Roberts, W. P.	Sioux Falls
Sackett, Roy	Parker
Schwartz, Jos.	Sioux Falls
Sherwood, H. H.	Humboldt
Stegeman, S. B.	Salem
Stenberg, E. S.	Sioux Falls
Stern, M. A.	Sioux Falls
Stevens, G. A.	Sioux Falls
Stevens, R. G.	Sioux Falls
Thompson, T. G.	Sioux Falls
Tufts, A. H.	Sioux Falls
Van Demark, G. E.	Sioux Falls
Vaughn, L. B.	Hurley
Wendt, C. L.	Canton
Zimmerman, Goldie	Sioux Falls

YANKTON DISTRICT MEDICAL SOCIETY—NO. 8

PRESIDENT	
Kalayjain, D. S.	Parker
SECRETARY	
Hohf, J. A.	Yankton
Adams, G. S.	Yankton
Beall, L. F.	Irene
Berry, S. G.	Tyndall
Bigler, Lottie G.	Yankton
Blezek, F. M.	Tabor
Braddock, W. H.	Yankton
Brookman, L. J.	Vermilion
Burkland, P. R.	Vermilion
Bushnell, Wm. F.	Elk Point

Creelius, H. A.	Volin
Cruikshank, T.	Vermilion
Duguid, J. O.	Springfield
Freshour, I. M.	Yankton
Frink, R. P.	Wagner
Hohf, J. A.	Yankton
Hohf, S. M.	Yankton
Isaac, J. P.	Freeman
Johnson, G. E.	Avon
Joyce, E.	Hurley
Kalayian, D. S.	Parker
Kauffman, E. J.	Marion
Keeling, C. M.	Springfield
Klima, H.	Tyndall

Landmann, G. A.	Scotland
Langley, C. S.	Lake Andes
Leighton, I. W.	Scotland
Moore, F. A.	Lesterville
Morehouse, E. M.	Yankton
Pfister, F.	Yankton
Remey, C. E.	Chicago
Smith, F. C.	Yankton
Stansbury, E. M.	Vermilion
Sweeney, F. A.	Wakonda
Trierweiler, J. E.	Yankton
Willhite, F. V.	Redfield

BLACK HILLS DISTRICT MEDICAL SOCIETY—NO. 9

PRESIDENT	
Hare, Carlyle,	Spearfish
SECRETARY	
Stewart, J. L.	Lead
Allen, A. G.	Hot Springs
Barker, J. A.	Hot Springs
Bentley, W. S.	Sioux Falls
Chassell, J. L.	Belle Fourche
Clough, F. E.	Lead
Crane, H. L.	L'Oryra, Peru, S. A.
Crouch, J. A.	Belle Fourche
Ewald, P. P.	Lead
Fasser, A. O.	Cheyenne, Wyo.
Fleeger, R. B.	Lead

Geyerman, P. F.	Deadwood
Hare, Carlyle	Spearfish
Hargens, C. W.	Hot Springs
Heinemann, A. A.	Wasta
Hodges, V. R.	Lead
Howe, F. S.	Deadwood
Ince, H. J. T.	Rapid City
Jackson, A. S.	Lead
Jackson, R. J.	Rapid City
Jernstrom, R. E.	Wall
Long, Martin	Custer
Mattox, N. E.	Lead
Miller, George	Spearfish
Mills, G. W.	Wall
Minty, F. W.	Rapid City

Mitchell, Fred L.	Newell
Morse, W. E.	Rapid City
Morsman, C. F.	Hot Springs
Newby, H. D.	Rapid City
O'Toole, T. F.	New Underwood
Owen, N. T.	Rapid City
Pemberton, M. O.	Deadwood
Ramsey, Guy	Philip
Radusch, Freda	Rapid City
Rogers, J. S.	Hot Springs
Stewart, J. L.	Lead
Vercoe, W. L.	Deadwood
Walsh, J. M.	Rapid City
Woodworth, R. E.	Sanator
Young, Blaine A.	Hot Springs

ROSEBUD DISTRICT MEDICAL SOCIETY—NO. 10

PRESIDENT

Quinn, R. J. _____ Burke

SECRETARY

Overton, R. V. _____ Winner

Bryant, F. A. _____ Herrick
 Carmack, A. O. _____ Colome
 Kenaston, H. R. _____ Bonesteel
 Malster, R. M. _____ Carter
 Matousek, W. J. _____ Dallas
 Murnan, H. A. _____ Winner

Overton, R. V. _____ Winner
 Quinn, J. F. _____ Gregory
 Quinn, W. M. _____ Winner
 Quinn, R. J. _____ Burke
 Waterman, J. C. _____ Burke

KINGSBURY DISTRICT MEDICAL SOCIETY—NO. 11

PRESIDENT

Grove, E. H. _____ Arlington

SECRETARY

Dyar, B. A. _____ De Smet

Ahern, J. J. _____ Oldham

Bostrom, A. E. _____ De Smet
 Butler, C. A. _____ Lake Preston
 Cowgill, C. H. Hunt'gt'n Pk., Cal
 Dickey, J. B. _____ Iroquois
 Dyar, B. A. _____ De Smet
 Feige, C. A. _____ Iroquois

Grove, E. H. _____ Arlington
 Hopkins, N. K. _____ Arlington
 Irvine, G. B. _____ Lake City, Minn.
 Jamieson, G. V. _____ De Smet
 Rae, H. B. _____ Lake Preston
 Scanlon, D. L. _____ Volga
 Stockdale, C. P. _____ Ethan

WHETSTONE VALLEY DISTRICT MEDICAL SOCIETY—NO. 12

PRESIDENT

Harris, H. G. _____ Wilmot

SECRETARY

Lowthain, G. W. _____ Milbank

Brown, A. E. _____ Webster

DeTuncy, A. E. _____ Milbank
 Flett, Chas. _____ Milbank
 Harris, H. G. _____ Wilmot
 Jenkins, P. B. _____ Waubay

Hawkins, A. P. _____ Waubay
 Hayes, C. E. _____ Waubay
 Lowthain, G. W. _____ Milbank
 Peabody, H. C. _____ Webster
 Peabody, P. D. _____ Webster
 Severide, A. L. _____ Webster

ALPHABETICAL ROSTER

Adams, G. S. _____ Yankton
 Adams, J. F. _____ Aberdeen
 Adams, B. A. _____ Bristol
 Aldrich, H. H. _____ Hitchcock
 Ahern, J. J. _____ Oldham
 Allen, A. G. _____ Hot Springs
 Allen, J. M. _____ Rosholt
 Alway, J. D. _____ Aberdeen
 Alway, R. D. _____ Aberdeen
 Ash, J. C. _____ Garden City
 Baer, T. H. _____ Timberlake
 Ball, W. R. _____ Mitchell
 Ballard, T. F. _____ Aberdeen
 Barker, J. A. _____ Hot Springs
 Bartholomew, G. F. Timber Lake
 Bartron, H. J. _____ Watertown
 Bates, J. S. _____ Clear Lake
 Bates, W. A. _____ Aberdeen
 Baughman, D. S. _____ Madison
 Beall, L. F. _____ Irene
 Bentley, W. S. _____ Sioux Falls
 Berry, S. G. _____ Tyndall
 Beukelman, W. H. _____ Stickney
 Bigler, Lottie G. _____ Yankton
 Billion, T. J. _____ Sioux Falls
 Billingsley, P. R. _____ Sioux Falls
 Blezek, F. M. _____ Tabor
 Bliss, P. D. _____ Colton
 Bobb, B. A. _____ Mitchell
 Bobb, Clyde S. _____ Mitchell
 Bobb, E. V. _____ Mitchell
 Bostrom, A. E. _____ De Smet
 Boutelle, L. E. Indianapolis, Ind.
 Braddock, W. H. _____ Yankton
 Brandon, P. E. _____ Sioux Falls
 Brenckle, J. F. _____ Northville
 Brimmer, K. W. _____ Volga
 Brookman, L. J. _____ Vermilion
 Buchanan, R. A. _____ Wessington
 Bruner, J. E. _____ Frederick
 Bryant, F. A. _____ Herrick
 Burkland, P. R. _____ Vermilion
 Burman, C. E. _____ Carthage
 Bushnell, Wm. F. _____ Elk Point
 Butler, C. A. _____ Lake Preston

Campbell, R. F. _____ Watertown
 Carmack, A. O. _____ Colome
 Case, T. J. _____ Delmont
 Chassell, J. L. _____ Bellefourche
 Clough, F. E. _____ Lead
 Cochran, F. B. _____ Plankinton
 Cook, J. F. D. _____ Langford
 Cooley, F. H. _____ Redfield
 Cottam, G. G. _____ Sioux Falls
 Countryman, G. E. _____ Aberdeen
 Cowgill, C. H. Hunt'gt'n Pk. Cal.
 Craig, D. W. _____ Sioux Falls
 Crain, C. F. _____ Redfield
 Crain, F. M. _____ Redfield
 Crane, H. L. _____ Lead
 Crawford, J. H. _____ Watertown
 Creamer, F. H. _____ Dupree
 Creelius, H. A. _____ Volin
 Crouch, J. A. _____ Belle Fourche
 Cruickshank, T. _____ Vermilion
 Culver, C. F. _____ Sioux Falls
 De Vall, F. C. _____ Garretson
 Deertz, J. J. _____ Brentford
 Delaney, W. A. _____ Mitchell
 DeTuncy, A. E. _____ Milbank
 Dick, L. C. _____ Spencer
 Dickey, J. B. _____ Iroquois
 Dinsmore, W. E. _____ Claremont
 Dickinson, W. E. _____ Canistota
 Doering, R. E. _____ Tripp
 Donahoe, S. A. _____ Sioux Falls
 Donahoe, W. E. _____ Sioux Falls
 Duguid, J. O. _____ Springfield
 Dunn, J. E. _____ Groton
 Dyar, B. A. _____ De Smet
 Eagan, J. B. _____ Dell Rapids
 Egan, M. H. _____ Sioux Falls
 Elward, I. R. _____ Ashton
 Ewald, P. P. _____ Lead
 Farrell, W. D. _____ Aberdeen
 Fasser, A. O. _____ Cheyenne, Wyo.
 Feige, C. A. _____ Iroquois
 Fisk, R. R. _____ Flandreau
 Fitzgibbon, T. G. _____ Huron
 Fleegee, R. B. _____ Lead

Flett, Chas. _____ Milbank
 Freeburg, H. M. _____ Watertown
 Freshour, I. M. _____ Yankton
 Freyberg, F. W. _____ Aberdeen
 Frink, R. P. _____ Wagner
 Gage, A. E. _____ Sioux Falls
 Gage, E. E. _____ Sioux Falls
 Gearhart, N. B. _____ Huron
 Gerdes, O. H. _____ Eureka
 Geyerman, P. F. _____ Deadwood
 Gifford, A. J. _____ Alexandria
 Gillis, F. D. _____ Mitchell
 Girard, A. G. _____ Hoven
 Herman, H. J. _____ Webster
 Gregg, J. B. _____ Sioux Falls
 Gregory, D. A. _____ Miller
 Green, B. T. _____ Brookings
 Griffith, W. H. _____ Huron
 Gross, D. W. _____ Frankfort
 Grosvenor, L. N. _____ Huron
 Grove, A. F. _____ Dell Rapids
 Grove, M. M. _____ Dell Rapids
 Grove, E. H. _____ Arlington
 Hagin, J. C. _____ Miller
 Halleck, P. P. _____ Letcher
 Hammond, M. J. _____ Watertown
 Hanson, O. L. _____ Valley Springs
 Hannon, L. J. _____ Hartford
 Hare, Carlyle _____ Spearfish
 Hargens, C. W. _____ Hot Springs
 Harris, H. G. _____ Wilmot
 Hart, B. M. _____ Onida
 Hart, R. S. _____ Groton
 Haskell, A. I. _____ Clark
 Hawkins, A. P. _____ Waubay
 Hayes, Clara E. _____ Waubay
 Heinemann, A. A. _____ Wasta
 Hendrickson, Paul, _____ Vienna
 Herman, H. J. _____ Webster
 Hickman, G. L. _____ Bryant
 Hill, L. G. _____ Sioux Falls
 Hill Robert _____ Ipswich
 Hoagland, C. C. _____ Madison
 Hodges, V. R. _____ Lead
 Hohf, J. A. _____ Yankton

Hohf, S. M.	Yankton	Magee, W. G.	Watertown	Saylor, H. L.	Huron
Hopkins, N. K.	Arlington	Malloy, J. F.	Mitchell	Scanlon, D. L.	Volga
Housman, W. McK.	Sioux Falls	Malster, R. M.	Carter	Schmidt, I. H.	Faulton
Howe, F. S.	Deadwood	Martin, H. B.	Harrold	Schwartz, Jos.	Sioux Falls
Howg, E. M.	Lennox	Martin, T. P.	Gary	Schwendener, J. E.	Bryant
Hoyme, A. H.	Salem	Matousek, W. J.	Dallas	Seeman, C. A.	Tulare
Hummer, H. R.	Canton	Mattox, N. E.	Lead	Seeman, H. J.	Rockham
Hunt, Wm. N.	Letcher	Mayer, R. G.	Aberdeen	Senescall, C. R.	Veblen
Hurley, S. E.	Gettysburg	Maytum, W. J.	Alexandria	Servide, A. L.	Webster
Hyden, A.	Alcester	Mertens, J. J.	Gettysburg	Sewell, H. D.	Huron
Ince, H. J. T.	Rapid City	Miller, Frank	Aberdeen	Sherwood, C. E.	Madison
Irvine, G. B.	Lake City, Minn.	Miller, H. A.	Brookings	Sherwood, H. H.	Humboldt
Isaac, J. P.	Freeman	Miller, George	Spearfish	Sherwood, H. W.	Doland
Jackson, A. S.	Lead	Miller, J. L.	Mitchell	Shirley, J. C.	Huron
Jackson, E. B.	Aberdeen	Mills, G. W.	Wall	Sigler, G. V.	Highmore
Jackson, R. J.	Rapid City	Minard, R. W.	Midland	Smiley, T. B.	Mt. Vernon
Jacobey, W. K.	Mobridge	Minty, F. W.	Rapid City	Smith, F. C.	Yankton
Jamieson, G. V.	De Smet	Mitchell, Fred L.	Newell	Smith, S. W.	Watertown
Jenkins, P. B.	Waubay	Mizner, Mark	Parkston	Sprague, B. H.	Huron
Jenkinsen, H. E.	Wess. Springs	Moe, A. J.	Sioux Falls	Staley, F. H.	Vienna
Jernstrom, R. E.	Wall	Moore, F. A.	Yankton	Stansbury, E. M.	Vermilion
Johnson, A. Einar	Watertown	Morehouse, E. M.	Yankton	Stenberg, E. S.	Sioux Falls
Johnson, G. E.	Avon	Morrisey, R. J.	Ft. Pierre	Stern, M. A.	Sioux Falls
Johnston, M. C.	Aberdeen	Morse, W. E.	Rapid City	Stegeman, S. B.	Salem
Jones, A. L.	Corsica	Morsman, C. F.	Hot Springs	Stewart, F. H.	Kimball
Jones, T. D.	Bowdle	Mullen, R. W.	Sioux Falls	Stewart, J. L.	Lead
Jones, E. W.	Mitchell	Murdy, B. C.	Aberdeen	Stevens, G. A.	Sioux Falls
Jones, T. E.	Sioux Falls	Murdy, Robert C.	Aberdeen	Stevens, R. G.	Sioux Falls
Jordan, L. E.	Chester	Murdy, R. L.	Aberdeen	Stockdale, C. P.	Erwin
Joyce, E.	Hurley	Murnan, H. A.	Winner	Stout Trent	Pierre
Kalayjian, D. S.	Parker	Murphy, T. W.	Pierpont	Sweezy, F. A.	Wakonda
Katz, O. W.	Seneca	Nessa, N. J.	Sioux Falls	Tarbell, H. A.	Watertown
Kauffman, E. J.	Marion	Newby, H. D.	Rapid City	Taylor, E. B.	Huron
Keeling, C. M.	Springfield	Nilson, F. C.	Sioux Falls	Templeton, C. V.	Gt. Falls, Mont.
Keene, L. M.	Winthrop, Minn.	Northrup, F. A.	Pierre	Thomas, Benj.	Huron
Keller, S. A.	Sioux Falls	O'Toole, T. F.	New Underwood	Thompson, T. G.	Sioux Falls
Keller, W. F.	Sioux Falls	Olson, C. O.	Groton	Tobin, F. J.	Mitchell
Kellogg, H. E.	Madison	Overton, R. V.	Winner	Torwick, E. E.	Volga
Kelly, R. A.	Mitchell	Owen, N. T.	Rapid City	Totten, F. C.	Lemmon
Kenaston, H. R.	Bonesteel	Paddleford, J. F.	Miller	Trierweiler, J. E.	Yankton
Kenney, H. T.	Watertown	Pankow, L. J.	Sioux Falls	Treon, Fred	Chamberlain
Kenton, Chas. B.	Artesian	Parke, L. L.	Canton	Tschetter, J. S.	Huron
Kertesz, G.J.V.E.	Pine Riv., Min.	Parsons, H. C.	Watertown	Tufts, A. H.	Sioux Falls
Kidd, F. S.	Woonsocket	Paulson, A. J.	Watertown	Twining, G. H.	Mobridge
Kimble, O. A.	Murdo	Peabody, H. C.	Webster	Unruh, B. H.	Emery
King, H. I.	Aberdeen	Peabody, P. D.	Webster	Van Demark, G. E.	Sioux Falls
King, Owen	Aberdeen	Pemberton, M. O.	Deadwood	Vaughn, J. B.	Castwood
Klima, H.	Tyndall	Perkins, E. L.	Sioux Falls	Vaughn, L. B.	Hurley
Koren, Finn	Watertown	Pfiister, F.	Yankton	Vercoe, W. L.	Deadwood
Kraushaar, F. J.	Aberdeen	Pittenger, E. A.	Aberdeen	Von Wohleben, G.	Herreid
Kutnewsky, J. K.	Redfield	Potter, Geo. W.	Redfield	Waldner, J. L.	Parkston
Landmann, G. A.	Scotland	Pugh, C. F.	Florence	Walker, J. F.	Bison
Langley, C. S.	Lake Andes	Putnam, E. D.	Sioux Falls	Wallis, S. R.	Armour
Launsbach, G. W.	Huron	Putnam, F. I.	Sioux Falls	Walsh, J. M.	Rapid City
Lavery, C. J.	Aberdeen	Quinn, I. F.	Gregory	Waterman, J. C.	Burke
Leighton, I. W.	Scotland	Quinn, R. J.	Burke	Weishaar, C. H.	Aberdeen
Lierle, G. A.	Canova	Quinn, W. M.	Winner	Wendt, C. L.	Canton
Lloyd, J. H.	Mitchell	Rae, Harold B.	Lake Preston	Westaby, J. R.	Madison
Lockwood, J. H.	Henry	Ramsey, E. T.	Clark	Westaby, R. S.	Madison
Lokke, B. R.	Egan	Ramsey, Guy	Philip	Whitcomb, E. W.	Cresbard
Long, A. G.	Sioux Falls	Ranney, T. P.	Aberdeen	White, W. E.	Ipswich
Long, Martin	Custer	Reagan, R.	Sioux Falls	Whiteside, J. D.	Aberdeen
Lowe, C. E.	Mobridge	Remy, C. E.	Chicago	Willhite, F. V.	Redfield
Lowthain, G. W.	Milbank	Rice, D. B.	Britten	Williams, C. A.	Doland
Lundquist, C. G.	Leola	Richards, G. H.	Watertown	Wilson, R. D.	Aberdeen
McCarthy, P. V.	Aberdeen	Rider, A. S.	Flandreau	Willy, R. G.	Mitchell
McCauley, C. E.	Aberdeen	Riggs, T. F.	Pierre	Wood, T. J.	Huron
McClellen, S. A.	Kennebec	Robbins, Emma E.	Aberdeen	Woodworth, R. E.	Sanator
McIntyre, P. S.	Bradley	Roberts, W. P.	Sioux Falls	Wright, O. R.	Huron
McKie, J. F.	Wessington	Radusch, Freda S.	Rapid City	Young, B. A.	Hot Springs
McLaurin, A. A.	Pierre	Rogers, J. S.	Hot Springs	Young, E. M.	Mitchell
McWhorter, Port	Miller	Sackett, Roy	Parker	Zachritz, G. F.	Faulton
Mabee, O. J.	Mitchell	Saxton, W. H.	Huron	Zimmerman, Goldie	Sioux Falls

THE PRESIDENT'S ADDRESS: OUR MEDICAL ASSOCIATION*

BY W. R. BALL, M.D.

MITCHELL, SOUTH DAKOTA

The South Dakota State Medical Association was organized on the second day of June, 1882. Drs. O. S. Pine and H. G. C. Rose, of Milbank, conceived the idea of organizing a medical association for the Territory of Dakota. They issued a call addressed to a number of physicians throughout the Territory, and the first meeting was held at Milbank on the date above indicated.

The meeting was called to order by Dr. Alex. Grant, of Bath, who was elected temporary chairman. Dr. W. E. Duncan was elected temporary secretary.

The first name adopted was "Dakota Medical Association."

A constitution and by-laws were adopted, and the following names signed the same as charter members: O. S. Pine, Milbank; H. G. C. Rose, Milbank; Alex. Grant, Bath; S. B. McGlumphy, Yankton; J. B. Van Velsor, Yankton; D. Frank Etter, Yankton; W. E. Duncan, Ellendale; L. F. Diefendorf, Aberdeen; J. G. Conley, Elk Point; J. C. Morgan, Sioux Falls.

Permanent organization was effected by the election of officers as follows: President, S. B. McGlumphy; first vice-president, O. S. Pine; second vice-president, Alex. Grant; secretary, H. G. C. Rose; assistant secretary, L. F. Diefendorf; treasurer, O. S. Pine; censors, Alex. Grant, W. G. Duncan, and D. F. Etter.

Delegates to the American Medical Association, O. S. Pine, and S. B. McGlumphy.

The proceedings of the first meeting were published in the Grant County Review.

In 1885 a new constitution and by-laws were adopted, and measures were taken to incorporate the society. In 1889 the name was changed to "South Dakota State Medical Society." It was this year, on May 2, that the Territory of Dakota was divided into North and South Dakota.

In 1890 the Society voted to incorporate. On May 29, 1891, a certificate of incorporation was issued. On June 4 and 5, 1902, the Society met at Scotland. Here the question of reorganizing the Society on the lines proposed by the American Medical Association was taken up, and a committee was appointed to draft a constitution and by-laws and to prepare a way for affiliation with the national association.

Drs. R. C. Warne, Wm. Edwards, and E. L. Brown were appointed as such committee.

At a Mitchell meeting, held May 27 and 28, 1903, the Committee on Reorganization appointed at the Scotland meeting, reported the constitution and by-laws under which the Association is now working.

The by-laws provide for the division of the state into nine councilor districts, with a medical society in each district. We now have twelve districts. And in 1925 the membership of all districts was 327, which is about half of the number of physicians residing in the state.

The Eclectic Medical Society has a membership of about 20, which leaves a large number of physicians who should belong to our association. We need these doctors, and they need us. It is estimated that only two out of every three doctors in the United States are members of any medical society. I would like to see an increase in the membership in our state. We should have every doctor legally licensed to practice medicine and of good moral standing become a member if possible. Let me cite some reasons why physicians should be members of the South Dakota State Medical Association:

1. Modern medicine is keeping stride with scientific research.
2. Membership in the State Association provides you with publications recording the latest developments in the Association.
3. Membership in the State Association gives you opportunity to discuss medical problems with the leaders of the profession.
4. Admits one entrance to medical societies in any state in the United States.
5. The welfare of your profession depends upon the support you give it—a well-organized profession means greater respect and better compensation.

STATE DUES

The State Medical Association has only one dependable source of revenue—and it costs money to carry out any program. The program must be the right kind to promote the interest of the society and of its individual members. I would suggest that our assessment be large enough to provide for meetings of the Councilors; for sending speakers to district society meetings; some plan of medical defense; greater attention

*Presidential Address before the Forty-fifth Annual Meeting of the South Dakota State Medical Association, May 19, 1926.

to medical and health legislation; improvement of its Journal; for the publication of material designed to inform the public concerning the aims and purposes of organized medicine.

HOSPITALS

The total number of hospitals in the state is 58; for community use, 37; population per hospital bed, 420; percentage of beds occupied, 53; percentage of counties without hospitals, 52.1.

In the state of Illinois total population per hospital bed is 275; counties without hospitals, 31 per cent. In the state of Indiana the population per hospital bed is 366; counties without hospitals, 32.6 per cent.

Counties are large and regions sparsely settled in the western part of our state.

Every community should have hospital facilities and every village and town should have a doctor. It seems that most of the recent graduates do not wish to start practicing in the smaller places, as they formerly did. Many towns in our state are now without any doctor. Better roads and automobiles have helped the situation somewhat, but will not suffice. Minnesota reports that there are 127 villages in that state without doctors, and not more than 12 per cent of the population of the United States enjoys anything like modern health supervision.

PERIODIC EXAMINATIONS

We all have persons come to us with advanced

cardiovascular-renal diseases which are first discovered at the time of a physical examination for employment or for life insurance, and who thought themselves apparently healthy; and we all know that many of these cases are at the time of discovery in a stage that little can be hoped for as to any permanent relief. If we can bring about periodic examinations, say once or twice a year, of most of our citizens, and follow the good example of examining the children for physical defects, we can be of no greater service to humanity. The A. M. A. made this one of its major activities, and at the recent Dallas meeting they had special clinics showing how these examinations should be conducted, and every effort was made to popularize this movement.

The district societies should start the campaign by having as many of the individual members as possible undergo the examinations. Blanks for the physical examinations should be in the waiting room of every physician. A manual for the conduct of periodic examinations is issued by the Association. When we all realize what a great service we can render our patrons by the way of Preventive Medicine we shall be well rewarded for the time spent.

In closing, I wish to make a plea for the compiling the history of medical practice in South Dakota. We are a young state, but this should be started now as it will take a committee a long time to bring this history up to date; it is a big job but well worth doing.

THE NATURE AND TREATMENT OF INFANTILE COLIC*

BY ROOD TAYLOR, M.D., PH.D.

Assistant Professor Pediatrics, University of Minnesota

MINNEAPOLIS, MINNESOTA

All of us have been called from sleep to listen to the baby's crying, have viewed his little person, and seen his face red and purplish, his muscles set, his arms waving frantically, his thighs drawn up on his abdomen, and have heard him voicing a distress which alarmed the family and impaired its morale. This distress is caused by contraction of the muscle coats of the intestine. My own x-ray observations make me think that this occurs in two ways. The first way is simple, spastic contraction. This does not produce the most severe colic and is usually evidenced only by writhing and squirming. In the second way,

the original spasm persists long enough to act as an obstruction. Painful hyperperistalsis and then painful distention follow, as the gaseous and other contents of the bowel are forced into the segment immediately above the spastic contraction.

There is no known anatomical or chemical factor peculiar to the first few months of life which explains the young infant's liability to colic. The immediate cause seems to be a tendency to an over-activity of unstriated muscle of which colic is not the only manifestation. For example, one sees gastrospasm in many colicky infants. Through the fluoroscope, I have watched the lower portion of the stomach, contracted like a bulb, forcing a mixture of barium and breast

*Presented before the Manitoba Medical Association, September, 1925, and the Clinical Club of Minneapolis, April, 1926.

milk in driblets through a spastic pylorus, and then seen these driblets dart rapidly hither and thither through the entire length of the small intestine. Spasm of the esophagus and cardia frequently occurs, and I once attended a baby whose attacks of colic and vomiting were sometimes accompanied by laryngospasm and asphyxia.

I have taken tracings by means of an inflated bulb in the stomach connected with a manometer and revolving drum which show that the contractions of the empty stomach are more marked in young infants than in older ones, and that these contractions are very much more forcible in premature infants than in those born at term.

Infantile colic does not, as a rule, attract attention during the first two weeks, probably because the baby is too sleepy to recognize it himself. But even during the new-born period we meet evidences of increased motor activity in numerous curdy, slimy, green stools, writhing and squirming, vomiting, and occasionally having attacks of crying relieved by the passage of the stool and flatus.

This increased irritability of unstriped muscle may be due to an incompletely developed nervous system, it may be due to tissue hunger, or it may be due to a combination of causes; but it undoubtedly exists.

There are certain more or less controllable factors which have a decided influence upon colic. Of these, the two most important are food and rest. It is a truism that the best food for babies is breast milk; but the fact remains that colic is most frequent in breast-fed infants. This is associated in some way with the fact that human milk is more easily acidified and more quickly passed out by the stomach than cow's milk. It then stimulates the intestinal muscles to a degree of activity much greater than that after cow's milk feeding. Over-feeding on the breast may be a factor, but in my experience it is not common. I believe that over-feeding seldom occurs in infants that nurse at regular intervals of three or four hours, although too frequent and irregular nursing sometimes produces indigestion and colic which is relieved when the feeding fault is corrected. The great majority of breast-fed infants with colic are under-fed and hungry, and on examination the skin and subcutaneous tissues of the thighs appear too voluminous for their content. It is interesting to note how the tendency to colic ceases as the baby's thighs become incased with subcutaneous fat. In some of these infants it may be difficult to differentiate between simple hunger and colic. If hunger alone is the cause

of the crying an increase of the breast supply will immediately stop the crying; but where colic is also present it will persist for some time, although usually diminishing as the baby's nutrition improves.

A few years ago Shannon called attention to another cause of colic in breast-fed infants, namely, allergic reactions on the part of the baby to proteins carried over in the mother's milk. In spite of careful investigation, I have yet to see such a phenomenon, and I regard it as rare. I have never been able to relieve the baby's colic by changing the mother's diet.

The artificially fed infant should never have colic and will never have it on a suitable mixture. A relatively too large proportion of fermentable carbohydrate, especially of lactose or of fat, is the most common cause in these infants.

After the third month we sometimes see severe colic due to farina or oatmeal, to certain vegetables, particularly peas or to obviously indigestible foods. In some instances intolerance for cellulose persists well into the second year. It is possible that these children will grow up to be adults with spastic colons; but I have no evidence on this point.

Next to the food factor and in many instances of still more importance is the rest factor. These babies need rest and solitude, preferably in a darkened room. The fewer stimuli which reach them the less colic they will have. Over-catharsis, beginning all too frequently with the use of castor oil to clean out the meconium, is another factor in the excitation of colic and one with which we might well dispense.

Too much attention has been paid to gas as a cause of colic. Fluoroscopic observations show large collections of air or other gas in the stomach and bowel of many perfectly comfortable infants. Therapeutic measures which relieve the paroxysm result in the passage of gas, as they relieve the bowel spasm; but the distending accumulations of gas are the result, and not the cause, of the enterospasm.

Some babies have severe colic, many have it moderately, and others appear to have none at all. During the first two months the majority of breast-fed infants pass daily two or more stools which contain green bile, so-called curds, and some mucus, all evidence of an increased speed in passage through the bowel which has not allowed sufficient time for digestion or absorption. After the third month the mother begins to worry about constipation, and the explanation is that the baby is usually comfortable and so free from bowel distress that he may

wait forty-eight hours or more without making any effort to empty his rectum.

Other causes for crying should be considered before a diagnosis of colic is made. I refer particularly to spoiling, to hunger, to otitis media, and to intussusception.

Little objection can be made to most of the household measures for relieving the paroxysms, provided they do not result in over-handling and consequent loss of rest. Heat to the abdomen will certainly relieve pain, and carminatives will often give temporary relief. Irrigation of the colon is, however, the most effective remedy, and can usually be relied upon to stop the paroxysm. Chloral hydrate is most effective and can be given following the irrigation. Paregoric in safe doses is of little or no value.

Treatment for the underlying condition is as important as measures for the relief of the paroxysms. Sedgwick treated these patients by telling the baby's mother that she was mistaken, that there was no such thing as colic, and then proceeded to regulate the baby's feeding and management. A few may have been taken to other doctors; but the great majority thrived, became comfortable, and continued on the breast.

If the baby is breast fed my routine is to secure for him the proper amount of breast milk, to have him given both breasts every four or every three hours, to protect the diaper area with a thick ointment, and to direct that he be isolated in a darkened room and that this isolation be broken only when the baby is bathed and nursed. The diapers are changed only at nursing time.

In papaverin and atropin we possess two drugs which are effective in relieving enterospasm. Our usual prescription calls for papaverin hydrochloride, one grain made up to four ounces with water. One teaspoonful given twenty minutes before each feeding often keeps the baby comfortable. Atropin is even more effective, but is more difficult to give as the proper dosage must be determined for each individual, and may vary from one one-thousandth to one seventy-fifth of a grain likewise given twenty minutes before nursing. Some babies are markedly intolerant to atropin, and with them its use is followed by 'reverse hyperpnea' and restlessness, but in the majority an amount just short of that which dilates the pupils will abate colic. In many cases the baby is made decidedly more comfortable before even mildly toxic symptoms, such as flushing, are induced.

Only rarely is it necessary to substitute artificial feeding for the breast. I have notes of

only three such cases. They were treated in the hospital, and complete relief was obtained in each after they were placed upon protein milk (Finkestein's Eiweissmilch). More frequently it has seemed advisable to add a small quantity of some cow's milk preparation to each nursing. The good effect of this may be due, in some instances, to the increased nourishment; but in general its benefits seem to parallel the effect of the formula in slowing gastric and intestinal motility. The formulæ most commonly used have been boiled skimmed milk, usually an ounce after each nursing, the above-mentioned protein milk, or a suspension of one of the commercial calcium caseinates, such as casec or laroson in breast milk or water.

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BOOK NOTICES

BLOOD CHEMISTRY COLORIMETRIC METHODS FOR THE GENERAL PRACTITIONER. Willard J. Stone, M.D. Second edition. 142 pages. Illustrated. Cloth (special waterproof), \$3.25. New York: Paul B. Hoeber, 1926.

This book covers blood chemistry briefly and concisely and gives clinical comments on various diseases in which blood chemistry is of value.

It is a book to recommend to the student in blood chemical methods. It can also be of great value to the physician who wishes to understand the value of blood chemistry in diagnosis and prognosis.

—FLOYD GRAVE, M.D.

VITAL CAPACITY OF THE LUNGS. A Handbook for Clinicians and Others Interested in the Examination of the Heart and Lungs Both in Health and Disease. By J. A. Myers, M.S., Ph.D., M.D., Assistant Professor of Preventive Medicine and Public Health, Medical and Graduate Schools, University of Minnesota. With introduction by S. Marx White, B.S., M.D., F.A.C.P., Professor of Medicine and Chief of the Department of Medicine, University of Minnesota. Cloth. Price \$3.25. Pp. 140, with 32 illustrations. Baltimore: Williams & Wilkins Company, 1925.

In recent years the study of the vital capacity of the lungs has become of interest to both the investigator and clinician. A considerable amount of literature has accumulated on the subject. Dr. Myers reviews the entire subject from the earliest studies up to the present time in a very complete manner. Starting with its historical development, Dr. Myers considers first the physiological conditions which may alter the vital capacity such as occupation, age, sex, height, weight, obesity, race, and nationality. The effect of disease upon the vital capacity is well covered in a chapter in which a number of charts and tables are included. In this chapter the author summarizes the results of various investigations, including his own, on the alterations produced by such diseases as pulmonary tuberculosis, cardiac disease, emphysema, asthma,

pleurisy, pneumothorax, new growths, and pneumonia.

The author then discusses the practical applications of the vital capacity test to the clinician, citing some illustrative cases.

The two closing chapters describe the instruments used in obtaining the vital capacity, the body measurements necessary, and the standards to be used for the estimation of an individual's normal vital capacity.

A large number of tables are included so that the theoretical normal may be obtained with ease and accuracy. This monograph is concluded by a very complete bibliography.

The clinician who is using the vital capacity test in practice will find this small compact handbook of much practical value. Likewise, the investigator in this field will find much that is interesting and useful in this volume. —M. H. NATHANSON, M.D.

COLLECTED PAPERS BY THE STAFF OF THE HENRY FORD HOSPITAL. First series 1915-1925. 665 pages. Illustrated. Cloth, \$8. New York: Paul B. Hoeber, 1926.

This book represents the writings by the members of the staff of the Henry Ford Hospital during the first ten years of its existence. Most of the articles have appeared from time to time in magazines, but this is the first bound volume to appear. The articles represent nearly all phases of medicine, and there has been no attempt to make any definite sectional division.

The articles on medicine and surgery are very interesting and deal with a variety of subjects. Other articles on obstetrics, x-ray, and metabolism appear, which show that some excellent studies have been made in these departments. From the laboratory standpoint there are some interesting articles dealing with calcium and phosphorus metabolism, also some work showing novel tissue work.

The articles are supplemented with two sections, Appendix A and Appendix B. Appendix A deals particularly with various technical appliances at use in the hospital, which may be read to good advantage. Appendix B deals with a short account of the history and physical equipment of the hospital.

This volume is to be followed by subsequent volumes from time to time as such material accumulates to be of value. —A. E. CARDLE, M.D.

SIXTY YEARS IN MEDICAL HARNESS. By Charles Beneulyn Johnson, M.D. Introduction by Victor Robinson, M.D. Volume I of The Library of Medical History. \$3.00, postpaid. Published by Medical Life Press, 12 Mt. Morris Park West, New York, N. Y.

This book is intensely interesting reading. One almost regrets that there is no more of it when one has finished. One is brought into contact with the lives of most of the outstanding medical figures of the last few generations, not only here in the United States, but in England, Germany, and France.

Dr. Johnson's life as a country practitioner has been one of extraordinary vigor and activity. He has been widely interested in features other than medical practice, and this adds to the attractiveness of his volume. His wish, expressed towards the end of this book, seconding Dr. Marion Sims', that if he had his life to live over again he would try to

get more money out of it, makes one almost wonder if he could possibly have enjoyed life more under any other circumstances. Really, his life has been like that of most doctors, filled with the principles of real worth. —DANIEL H. BESSESEN, M.D.

A TEXTBOOK OF PHYSIOLOGY. By William D. Zoethout, Ph.D. Second Edition. St. Louis. The C. V. Mosby Company, 1925.

In most chapters of this book the elements of physiology are well stated, but in some too briefly. The author states that it is intended to fill the gap between the larger texts, of which there are many in the field, and those offering a briefer course. It differs from most books which use the same title in that it contains much hygiene.

The chapter on "Muscle Nerve Physiology" considers such topics as exercise, posture, and training. The one on "Circulation of the Blood" contains more pure physiology, but here a few pathologic interpretations may not be unanimously accepted. Under "Respiration" the subject of mouth-breathing and colds is not dismissed with a few lines, and some statements here might be questioned. Even the chapter on "The Central Nervous System," which is fairly brief, but not exceedingly so in proportion to the others, lays great emphasis on the effects of insufficient amount of sleep, the harmful effects of tobacco and alcohol.

In short, it is a book primarily intended for students in dental pharmacy, and normal schools, dealing with the essentials of physiology, strongly emphasizing personal hygiene, and almost touching on therapeutics in some places, a book not to be recommended as a text for medical students or students of pure physiology. —JOHN QUIRK, M.D.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month). Volume V, Number III (Mayo Clinic Number, June, 1925), 260 pages with 115 illustrations. Per clinic year (February, 1925, to December, 1925). Paper \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

Twenty-three clinics are presented by twenty-eight surgeons from this clinic. It is clearly written, beautifully illustrated and the subjects are for the most part well covered. It is the best number of this series which we have seen.

W. J. Mayo's clinic touches upon the broader aspects of surgery rather than the elucidation of specific disorders. He presents a fascinating discussion of filtration phenomena, and he emphasizes the contribution of Arrhenius, Krogh, Rowntree, Keith, and others in relation to the co-operative restoration of function.

C. H. Mayo introduces gastric and duodenal ulcers and briefly reviews past and present medical and surgical methods. Specific disorders of this variety are discussed by Balfour, who treats their management and presents a series of clinics.

Six cases presenting as many different difficulties encountered in biliary surgery are concisely presented by Judd. Two assistants share the honor of Judd's second clinic which deals with numerous problems associated with urinary and prostatic calculi.

The remaining clinics are interesting and instructive and well presented. —R. C. WEBB, M.D.

THE JOURNAL-LANCET

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OCCUPATIONAL THERAPY

The question of new therapy methods to help correct nervous and mental disorders is not new, but it has greatly materialized within the last few years. In many major hospitals for mental and nervous cases in the West, as well as in the East, they have a building devoted to occupational endeavors in which they treat by creating an interest in the mind of the mental invalid the necessity of doing something constructive, or they sometimes send in an excited individual and put him in some occupational endeavor that changes his mind, or at least attracts his attention, and he forgets some of his old delusions and confusions and excitements.

We have a very interesting example of what can be done by occupational therapy at the School for Defectives at Faribault, and hospitals for crippled children; and it has been the privilege of the writer to see a few cases which were sent there at his suggestion, and to watch them through a period of one or two years and note the complete change which has taken place. One, a girl who was drifting, had become indifferent, and was on the verge of giving up her ideals and casting everything to the wind and living as she pleased, was fortunately rescued in time by some associates and friends and sent to the hospital for observation, and in spite of her protests she was sent to the Faribault School. She disclaimed

very emphatically that she was feeble mentally at all. The court decided, however, that a residence there would not be harmful. She fell into line in the work there, assisted in the musical development of the others, and in a year she was an absolutely changed young woman, so much so that she is second in charge of the occupational therapy room and was designated to take charge of occupational therapy in another institution. Other similar cases might be cited, but those who have read up on the subject at all will recall that they have seen and visited institutions where occupational therapy was a great factor in the cure of the patients' malady. Ever since the work in the various states was organized sixteen years ago, many of the hospitals have adopted it as an important factor in their work. In visiting these institutions it is interesting to note the difference in the methods of conduct, not only in occupation, but in the patient himself.

In some institutions they had so much money that they are not very much concerned about the ultimate result, and consequently the occupational room of one institution was occupied but little; but this happened to be a hospital for convalescent patients who were not especially nervous or mental in type, and perhaps they did not need much occupational therapy. In many institutions, however, and in European countries the work has been repeatedly recognized, and has been improved from time to time. In New York they have something like \$12,500,000 for each for successive years for the modernizing and development of the state hospital program; and this, of course, insures even more important results than could have been attained before.

Mrs. Slagle, who is the Director of Occupational Therapy for the State Hospital Commission, of New York, has had much experience in that line, first at Johns Hopkins under Adolf Meyer, then in the Department of Public Welfare in Illinois, and finally she accepted her present position with the New York Commission. She says that the value of this work was recognized a long time ago by Benjamin Rush. That was a great many years ago, but it had to await for our own time for general acceptance and application, and the real value of the work was not seen until the World War came.

Dr. Thomas W. Salmon, of Columbia, said, some time ago, "Occupational therapy will some day rank with anesthetics in taking suffering out of sickness and with antitoxins in shortening its duration." We think that occupational therapy is the only means of dealing with some of the chronic cases. Here it is truly applicable, and

the chronic case is the one that needs occupational therapy. The acute case is hardly suitable except under certain very definite instructions for the use of this method of therapy.

Dr. Floyd C. Haviland says that occupational therapy is the most useful single remedial agency for mental patients we have yet found. That this work has been successfully undertaken in large institutions has been thoroughly proved, and the beauty of it is that the scheme may be wonderfully enlarged, not only from needle work, but to the making of furniture, rugs, and smaller boxes, instruments for design; also old clothes, old rags, etc., have been successfully employed with certain people who are not able to do the finer things in occupational work.

One must remember, however, that unless this work is undertaken under proper management it is apt to lag in interest; unless the director of the work is sufficiently interested not much will be accomplished, not even by the director or by the patients who soon tire of hap-hazard methods.

It is not always easy to find suitable occupation for individual patients, in spite of the fact that that they are all individualists, and work under that banner. Their choice of work must be a great responsibility for the one who undertakes it.

A TRIBUTE TO A FAMOUS NEUROLOGIST, SIR FREDERICK MOTT

Most of our readers will have forgotten perhaps that Sir Frederick Walker Mott, the distinguished neurologist of England, died at the age of seventy-two. He was one of the makers of modern medicine. He belonged to that small company of ardent enthusiasts who yet possess in the severest degree the quality of self-criticism. His greatest contribution to medicine was his insistence on a physical basis for many mental disorders. Mott saw insanity, not as a disease of the soul or mind, but as a disease of the body.

He must have been a remarkable character as he was successful to a most marvelous degree. It was he who discovered and demonstrated that general paralysis of the insane is, in fact, syphilis of the brain. It is one of the "classic" diseases. It represented before Mott's day a great disorder of the mind and its symptoms, the delusions of grandeur and so forth have been studied intensively by generations of students. Mott brought this malady out of the mental to the physical sphere, and his statements have stood the tests of time and are now universally accepted. Mott lived to see the time, too, when the new treatment of this disease by artificially induced malarial fever was undertaken and his reviewer says that

thus within a generation a "disease of the mind" has been shown to be in fact a bacterial disease of the body and has been found to be curable, in some cases at any rate, by physical means.

Mott next turned his attention to the disease known as "precocious dementia." He was able to show that in shell shock, at which he worked with his wonted enthusiasm, there are a few cases in which there is actually a shock and in which tiny hemorrhages into the brain substance can be seen; that there is a large number of cases in which unfit men break down under the stress of war, and in which no actual shock has, as a rule, taken place, and have proved to be precocious forms of dementia. It was found, too, that certain cells in the brain of sufferers from this affliction showed definite changes, and Mott was able to indicate that these changes are of the nature of fatigue. He was further able to show that the changes of the brain bear a close relationship to the deficiency of some of the ductless glands, as well as some of the sexual glands, consequently this precocious dementia may have a physical basis with mental manifestation.

Mott must have had a brilliant record, not only as a physician, but as a pathologist, and his name has been honored in every civilized country, and he has been the recipient of all sorts of academic honors. Singularly as it may seem, and yet not to the knowing, the work that he valued most and the position that he thought he did his best, was that of pathologist to the London County Asylums.

TATTERED NERVES AND VACATION TIME

It is a long time since the writer has toyed with vacation possibilities and its relation to nervous people.

The average vacationist goes out because he or she wants to be in the great out-of-doors. Men go out because they choose to fish and hunt; women go on long automobile rides without any definite place in mind except to get away from household duties and make believe they are having a good time. Men and women who know how to take a vacation and know what is best for them should think it over very seriously before they take their unstable nervous apparatus with them in the country and to change their habits of life entirely, principally from one of comfort to one of discomfort. Of course it is quite true that there are many people who enjoy their vacations tremendously because they are so glad to get home again. That is, they are glad to get back to a normal atmosphere and a normal

environment, and frequently they are glad to get back to work.

However, there are some cases when it is necessary to get out of one's rut and to get into something entirely different, and no doubt many enjoy a visit to the country who have been penned up in the city, and a great many people start out with the idea of staying an indefinite time, but are forced to return reluctantly because circumstances demand it.

Then, too, there are a lot of people who go away on vacation and come back with a blowing sound issuing from their mouths and telling of what a wonderful time they had, but for some reason or other they return sick, and before long they are under the care of a doctor or in a hospital trying to recover from the indulgences of their vacation. Men who have sedentary habits, sitting around in their office chairs, walking at least a block or a block and a half a day, rush to the woods to fish, hunt, or play poker, and in the majority of instances they do not get the proper food or proper rest, and naturally there is a reaction when they return. They, too, are sick. Not infrequently they start up some chronic ill that has been waiting for just such an environment. Poor food, irregular sleep, and hard and unusual labor, which is an element in fishing or hunting, take all their reserve power, knock out their ability to withstand illness and let them down. Consequently, very often they come back worse than they were in the first place. Their vacation has been a poor one, a poorly planned one, and not carried out in any normal surroundings.

But it is plainly conceded that all of us need a change of environment and occupation sometime during the year in spite of the fact that we hear of innumerable cases of men who have worked for ten or fifteen years without a vacation. They work because they are machines, and the machinery inside of them runs smoothly because it is well oiled, well cared for, and because their wants are few.

An ideal vacation, of course, is to go to some sort of resort in the country where you are properly fed with clean food, where you can loaf, walk, or exercise in some other way as much as you please, and where you can throw off the cares of city life. That is the usual vacation that the usual person participates in.

Others enjoy their vacation in an entirely different way. The writer confesses that he would like to go to Chicago, New York, or some other place, go to a hotel, and have a room on the seventeenth floor, stay in bed as long as he pleases

in the morning, get up and have breakfast and luncheon in one meal, go out for an interesting walk or to visit book-shops and other interesting spots in a large city, and to go to a matinee or concert in the afternoon and a good theater performance in the evening, and where, too, when he is thus assured of good food and good living, he finds it not a difficult task. But at the end of ten days at the outside he begins to grow restless for the old spot and is eager and anxious to get back to his old job. He has gained much in his vacation, he has had what he thinks is a good time, has been of no trouble to anyone, his bank account may be a little short, but he comes home renewed, anxious and ready to work. Can you suggest anything better?

Or would you rather go to some wild and woolly place where insects and reptiles are hard working, where festive bugs inhabit a much-used bed, where the food is poorly prepared, and badly presented; and, perhaps, accompanied by a little disturbance of the digestive system you come home ill-mannered, irritable, and out of sorts. It takes you days to get adjusted and back to your normal state of health, but what a wonderful time you tell your friends you have had! We would not like to say that all vacationists are those who misrepresent things, but the average vacationist is more or less a liar, a pathological liar perhaps, but a liar just the same, and yet the whole town is doing it.

All sorts of places profit by the presence of the vacationist. All hotels, resorts, and near resorts thrive on the visitor from the city. Perhaps under the circumstances things sort of equalize themselves.

In a press clipping in which Mary Garden says "she's tired of it all, tired of it all, and she is going into some nice, quiet, gray-stoned convent where she can rest and think and smoke cigarettes and lead her own life. Mary's all mixed up. She thinks a convent is the same thing as Tom Taggart's hotel down at French Lick Springs."

MISCELLANY

CHRISTIAN PETER LOMMEN

WHEREAS, in accordance with the irrefragable plan of Divine Providence, Dean Christian P. Lommen has been called to his last reward, and

WHEREAS, through Dean Lommen's keen insight into the medical needs of South Dakota, he was instrumental in founding the School of Medicine and the State Health Laboratory as active units of the University of South Dakota, and

WHEREAS, by his untiring, conscientious, intelligently directed efforts, he developed an enviable reputation for the School of Medicine, and

WHEREAS, through his sympathetic understanding of the needs of the medical profession of this state and elsewhere, and because of his lofty ideals relative to the value of higher education to medicine, he gained the admiration and respect of the profession he so well served, and

WHEREAS, he thus indelibly identified himself with the medical profession of the state

Be it Resolved, that the South Dakota State Medical Association humbly acknowledges its indebtedness and that it extend deepest sympathy to the bereaved members of Dean Lommen's family, to the officers of the University and to the medical faculty, who will most keenly feel this loss.

Be it Further Resolved, that a copy of these resolutions be submitted to the members of Dean Lommen's family, a copy sent to the secretary of each of the District Medical Societies of the state and read at their next regular meeting, and a copy printed in the official publication of the South Dakota State Medical Society.

Drawn this ninth day of July, in the year of our Lord, nineteen hundred and twenty-six.

J. F. D. Cook, M.D., Sec'y-Treas.,
S. D. State Medical Association.

NEWS ITEMS

Dr. Norman Barden, of Minneapolis, died last month at the age of 34.

Dr. L. G. Smith has moved from Bismarck, N. D., to Mandan, N. D.

Dr. A. J. Findlater has moved from Center, N. D., to New Albin, Iowa.

Dr. Dewey Sutton, of Redfield, S. D., has gone to Vienna for a year's work in surgical pathology.

Dr. Horatio B. Sweetser, Jr., of Minneapolis, was married last month to Miss May Morrissey, of Antigo, Wis.

Dr. David O. Berge, a 1925 graduate of the Medical School of the University of Minnesota, has located at St. Hilaire.

Dr. A. P. Goblirsch, a 1924 graduate of the Medical School of the University of Minnesota, has located at Sleepy Eye.

The Minnesota Hospital Association, with a membership of two hundred fifty hospitals, was in session in St. Paul yesterday.

The Meeker and Stearns County Medical Societies held a picnic together at Annandale last month. A few papers were presented.

Dr. Fred McRuby, of Anderson, Ind., has become associated in eye, ear, nose, and throat work with Dr. L. W. Morsman, of Hibbing.

Dr. Richard R. Cranmer, of Minneapolis, has returned from a European trip. He spent two months visiting France, England, Switzerland, and Italy.

Dr. E. Klaveness, of Monticello, has been invited to review the Scandinavian medical journals for the *Urologist and Cutaneous Review*, of St. Louis, Mo.

The Taxpayers Association of Hennepin County (Minneapolis) has made a protest against the largely increased number of cases admitted free to the county hospitals.

Dr. O. S. Watkins, who practiced at Carlton for a number of years, has been appointed resident physician of the new state tuberculosis sanatorium at Basin, Wyoming.

Ground was broken last month for the building for St. Raphael's Hospital at St. Cloud, to be built by the Sisters of St. Benedict at a cost of a million and a half dollars.

Dr. Herman H. Jensen, a 1925 graduate of the Medical School of the University of Minnesota, has located at Atwater to become associated with Dr. O. M. Porter at that place.

Dr. Robert L. Owens, of Missoula, Mont., died last month at the age of 41. Dr. Owens graduated from the American Medical Missionary College, of Chicago, class of '07.

Dr. F. D. Hurd, who graduated from the Medical School of the University of Minnesota in the class of '23, and spent a year in the Fritzsche Clinic of New Ulm, has located in Drake, N. D.

Dr. G. J. Kertesz, of South Shore, S. D., assumes charge to-day of the Holman Hospital of Pine River, Minn. Dr. Kertesz formerly practiced in Minneapolis and was three years in the World War.

Dr. Harold R. Leland, of Minneapolis, was married today to Miss Sylvia Louise Scheldrup, daughter of Dr. N. H. Scheldrup, also of Minneapolis. Dr. Leland is a Minnesota Medical School graduate, class of '22.

Dr. James E. Merrill, of Amboy, died last month at the age of 59. Dr. Merrill graduated from the Medical School of the University of Minnesota in the class of '67, and had practiced at Amboy nearly thirty years.

The Roosevelt Hospital, of St. Paul, was opened last month. Dr. B. F. Simon, formerly City Health Officer of St. Paul, is the chief of staff of the new hospital, which is a private hospital and is open to all physicians. It is a thoroughly equipped hospital.

The Sioux Valley Medical Association gave up its midsummer meeting, which was scheduled for August at Sioux Falls, S. D., to accept an invitation to be the guests of the Upper Des Moines (Iowa) Medical Society, which met on Lake Okoboji, near Wilford, Iowa, on August 17 and 18.

Dr. A. A. Whittemore, State Health Director of North Dakota, has issued an appeal to the physicians of the state to urge larger appropriations by the next legislature to carry on health work in the state. His department has four divisions, over each of which there should be a competent superintendent, but the funds available are barely sufficient to support one division.

The Northern Minnesota Medical Association had a successful annual meeting in Crookston last month following the admirable program given in full in our issue of July 1. Officers for the current year were elected as follows: President, Dr. W. W. Will, Bertha; vice-president, Dr. J. G. Millspaugh, Little Falls; secretary-treasurer, Dr. F. J. Hirschboeck, Duluth. Place of next meeting, St. Cloud.

The next meeting of the Inter-State Post Graduate Assembly of North America will be held at Cleveland, Ohio, October 18-25. The tentative program shows a large list of distinguished men of world-wide reputation who will give addresses or clinics at the meeting. The Northwest is represented on the program by five papers by men of the Mayo Clinic: Drs. Balfour, Plummer, C. H. Mayo, W. J. Mayo, and Braasch. Dr. Carl J. Larsen, of St. Paul, is president-elect of the Assembly.

Dr. Ernest A. French, a graduate of the Medical School of the University of Minnesota, class of '03, for many years a practitioner at Plainview, Minn., died Tuesday on August 17, 1926, at the age of 48. He died at the Carbon Company Memorial Hospital, Rawlins, Wyoming, from heart complications following an operation for gall-stones and appendicitis five days before. Dr. French had discontinued his practice at Plainview on account of ill health and was on his way to Oregon by auto when taken ill at Rawlins. He was accompanied by his wife and son Rockwell. The body was taken to Portland, Oregon for interment.

Meeting of the Tri-County (N. D.) Medical Society

The Tri-County Medical Society held a meeting at Carrington on May 20. There were seven members present with one visitor.

The Society had the pleasure of having present the Secretary of the State Medical Association, Dr. A. J. McCannel, who gave two very interesting and unusual case-reports that came under his care during his army experience in the Hawaiian Islands.

The first patient was a plantation laborer, a Filipino, who entered the army in 1918. He was admitted to the hospital in July.

Family history, negative. He had two decayed teeth and the onset of acute diffuse periostitis that involved the whole lower jaw. Some teeth were extracted. He had a couple of impacted teeth. The condition became progressively worse. Finally all teeth of the lower jaw were extracted. Necrosis of the whole lower jaw bone resulted, except a part of the left coronoid, the right coronoid, and the condyles.

During September several sequestra were removed. From October to February following there was a gradual re-formation of the lower mandible. The making of a dental plate was considered, but presented difficulties due to lack of development of the alveolar process.

Dr. McCannel showed several x-ray films taken during the course of the disease.

The second case-report was that of a young man belonging to the Army Engineering Corps. He had had stomach trouble for twelve years. He was admitted to the hospital in September, 1918, with the following symptoms: abdominal pain, twelve to fifteen minutes after eating, two inches to the left and three inches below the navel. Lying on his back he had no pain. He had increased frequency of urination and pain in the left testicle. A suspensory relieved this pain. X-rays of the stomach and intestines were negative. There was a shadow over the region of the right kidney. He was under observation for a while on the medical service for stomach trouble.

Transferred to the surgical side, he came under the observation of Dr. McCannel, who found tenderness over the lower pole of the right kidney. Diagnosis, stone in right kidney.

At operation the kidney felt like a gall-bladder filled with stones. Nephrectomy was done. The kidney structure was all gone, and the capsule was filled with numerous calculi. The patient made a good recovery. His gastric and urinary symptoms all cleared up.

Dr. Tompkins reported a case of fibromyoma and also brought up for discussion a woman pregnant two months suffering from progressive tuberculosis.

Dr. Crawford gave briefly the history of a case of senile gangrene and another one of a patient with a bullet wound of the lung with recovery, but who subsequently developed pernicious anemia.

The value of transfusion in pernicious anemia was discussed.

A free discussion as to the reliability of the work of the North Dakota State Laboratories concluded the program.

It was moved and carried that the Society extend a vote of thanks and appreciation to Dr. McCannel for coming to our meeting and the presentation of his very interesting case-reports.

H. VAN DE ERVE, M.D., Secretary.

Optical Trial Case Wanted

If you have a second-hand optical trial case for

sale, address, giving description and price, 197, care of this office.

Position Wanted

By an experienced physiotherapy technician in a physician's office. Best of references. Address 204, care of this office.

Practice in Minneapolis for Sale

Practice and office fixtures and furniture in an excellent location in Minneapolis, on the south side, are offered for \$350. Address 198, care of this office.

Down-town Physician's Office for Rent

Will rent office space part time (8 A. M. to 2 P. M. and evening hours) or will sublet whole office. Dentist in same suite. Address 203, care of this office.

Wanted to Rent in Minneapolis

Private office, use of reception room and phone, with doctor or dentist, in good down-town office building; rent must be reasonable. Address 194, care of this office.

Apparatus for Sale

One Fischer Portable Diathermy Walnut Cabinet with accessories, and one Victor Bedside X-Ray Unit, 30 milliamperes capacity with Coolidge tube. Reasonable terms. Address 192, care of this office.

Physician Wanted in North Dakota

Fine location in western North Dakota for robust young doctor, who will be appointed County Health Official at salary. Practice should range from \$3,000 to \$6,000. Address 196, care of this office.

Technician Wanted

Crookston Clinic, Crookston, Minn., wants a nurse who can do laboratory work, take x-ray pictures, and give anesthetics. Position permanent to right person. Address Crookston Clinic, Crookston, Minn.

Practice for Sale

In western Minnesota town of 2,000 population, general practice with physiotherapy equipment. In-

come around \$1,000 per month. Practice sold at inventory price. Introduction. Address 201, care of this office.

Young Physician Wanted

To take over an old-established practice. City of 7,500 population in lake region of northern Minnesota. Office complete in every respect. No real estate. Reason for leaving, ill health. Address 193, care of this office.

Practice for Sale

A very lucrative unopposed general and surgical practice in a live modern town of 600 in eastern South Dakota. Mixed population. Excellent schools, good roads, good territory, no crop failures, well settled. This is an opportunity to make money from the start. Terms to suit purchaser. No real estate. Address 189, care of this office.

Physician Wanted

At Wolford, Pierce County, North Dakota. Town of about 200 population located in the northeastern part of the state, in a thriving agricultural community. Surrounding territory average about 25 miles to neighboring towns in all directions. Physician will find co-operation and a lucrative practice. For further information write the Farmers State Bank of Wolford, N. D.

New Connection Desired

A 1923 graduate of a first-class medical school desires to become associated with a high-class man (or clinic) whose major practice is surgery and has hospital connections. Best of references as to attainments, character, and personality furnished. Licensed in Minnesota. Address 186, care of this office.

Young Physician Wanted

To locate in a South Dakota town of 600, with large surrounding territory. Nearest town with doctor nineteen miles. Young druggist will furnish new two-room office (with seven windows) and heat and light free of charge. Old doctor will retire on account of poor health. Address 205, care of this office.

PHYSICIANS LICENSED AT THE JUNE (1926) EXAMINATION TO PRACTICE IN MINNESOTA

BY EXAMINATION

Name	School and Date of Graduation	Address
Alger, Leon James.....	U. of Minn., M.B., 1926.....	Minneapolis General Hospital
Braverman, Nathan J.....	U. of Minn., M.B., 1926.....	814 E. 5th St., Duluth, Minn.
Bray, Robert Bassett.....	U. of Minn., M.B., 1926.....	510 Essex St. S. E., Minneapolis.
Buzzelle, Leonard Kinnicutt.....	U. of Minn., M.B., 1926.....	Glen Lake San., Oak Terrace
Cable, Morris L.....	U. of Minn., M.B., 1926.....	808 Wash. Ave. S. E., Minneapolis
Chapman, Chas. Belson.....	U. of Minn., M.B., 1926.....	Minneapolis General Hospital
Creevy, Chas. Donald.....	U. of Minn., M.B., 1926.....	2022 Park Ave., Minneapolis
Davis, Jay Conger.....	U. of Minn., M.B., 1926.....	611 6th St. S. E., Minneapolis
Delavan, Philip Albert.....	U. of Minn., M.B., 1926.....	1819 Marshall, St. Paul, Minn.
Duff, Edwin Roy.....	Loyola, M.D., 1926.....	St. Mary's Hospital, Minneapolis
Ericson, Russell Waldo.....	Jefferson, M.D., 1926.....	2615 Newton Ave. S., Minneapolis
Fauth, Karl J.....	U. of Iowa, M.D., 1925.....	Clarence, Iowa
Fawcett, Arthur Maxwell.....	U. of Minn., M.B., 1926.....	Minneapolis General Hospital
Flanagan, Harold Francis.....	U. of Minn., M.B., 1926.....	Wykoff, Minn.
Funk, Victor K.....	U. of Minn., M.D., 1926.....	195 Macalester, St. Paul, Minn.
Hackett, Joseph Frank.....	U. of Mich., M.D., 1924.....	3028 Emerson Ave. So., Minneapolis
Hartzell, John Berry.....	U. of Cincinnati, M.D., 1925.....	Minneapolis General Hospital
Hillstrom, Harry Theodore.....	U. of Minn., M.B., 1926.....	2735 Aldrich Ave., Minneapolis
Johnson, Verner Paul.....	U. of Minn., M.B., 1926.....	904 30th Ave. So., Minneapolis
Kasper, Kelvin Anthony.....	Jefferson, M.D., 1926.....	Faribault, Minn.

Kernkamp, Leila Myrtle.....	U. of Minn., M.B., 1926	Waseca, Minn.
Koepcke, Gerald Meinhardt.....	U. of Minn., M.B., 1925	Minneapolis General Hospital
Leef, Edward E.....	U. of Minn., M.B., 1926	920 Essex St. S. E., Minneapolis
Lenander, Mellvin Everett L.....	U. of Minn., M.B., 1926	629 Wash. Ave. S. E., Minneapolis
Levine, Naftoli Michael.....	U. of Minn., M.B., 1926	211 Harvard, S. E., Minneapolis
Levitt, George X.....	U. of Minn., M.B., 1926	707 Univ. Ave. S. E., Minneapolis
Lindahl, Merlyn John.....	U. of Minn., M.B., 1926	714 Delaware St. S. E., Minneapolis
Lodmell, Elmer Arthur.....	U. of Minn., M.B., 1926	3615 Clinton Ave., Minneapolis
Lund, Chester Albin E.....	U. of Minn., M.B., 1926	1506 Park Ave., Minneapolis
McJilton, Charles Earle J.....	U. of Minn., M.B., 1926	St. Mary's Hospital, Minneapolis
Nathanson, Harold.....	U. of Minn., M.B., 1926	801 Elwood, Minneapolis
Nelson, Arthur E. J.....	U. of Minn., M.B., 1926	Miller Hospital, St. Paul
Nelson, Gordon Gilbert.....	U. of Minn., M.B., 1926	382 Lookout Place, St. Paul, Minn.
Nelson, Wallace Irving.....	U. of Minn., M.B., 1926	3443 11th Ave. So., Minneapolis
Nolan, Lewis Earle.....	U. of Minn., M.B., 1926	Cass Lake, Minn.
O'Connor, Loren Jeremiah.....	St. Louis U., M.D., 1926	127 W. Delos, St. Paul, Minn.
O'Hara, Floyd J.....	U. of Minn., M.B., 1926	1715 Hillside Ave., Minneapolis
Ochsner, Harold Conrad.....	U. of Minn., M.B., 1926	551 Carroll, St. Paul, Minn.
Papernmaster, Elik Jacob.....	U. of Minn., M.B., 1926	412 Jay St., St. Paul, Minn.
Petter, Charles Kenneth.....	U. of Minn., M.B., 1926	Glen Lake San., Oak Terrace
Ravitch, Samuel J.....	U. of Minn., M.B., 1926	3141 Dupont So., Minneapolis
Ready, Ruth Nystrom.....	U. of Minn., M.B., 1926	737 E. 18th St., Minneapolis
Regan, John Francis.....	U. of Minn., M.B., 1926	General Hospital, Kansas City, Mo.
Rice, Carlton Herman.....	U. of Minn., M.B., 1926	U. Hospital, San Francisco, Calif.
Sagel, Jacob.....	U. of Minn., M.B., 1926	623 N. Fremont Ave., Minneapolis
Sommer, Arno W.....	U. of Minn., M.B., 1926	911 E. 15th St., Minneapolis
Stewart, Nelson Wells.....	U. of Minn., M.B., 1926	Mankato, Minn.
Strader, Ernest Lightfoot.....	Hosp. Coll. Med. Louisville, Ky., M.D., 1902	Deerwood, Minn.
Strate, Gordon Edward.....	U. of Minn., M.B., 1926	657 McLean, St. Paul, Minn.
Swanson, Robert Ralph.....	U. of Minn., M.B., 1926	912 Franklin Terrace, Minneapolis
Stomberg, Dwight Wm.....	Jefferson, M.D., 1926	531 Walnut S. E., Minneapolis
Tanzer, Harry Hyman.....	St. Louis U., M.D., 1926	1038 Irving Ave. No., Minneapolis
Thompson, Harold Lincoln.....	Rush, M.D., 1924	Minneapolis General Hospital
Warden, Mildred.....	U. of Minn., M.B., 1926	2112 Humboldt Ave. So., Minneapolis
Warner, James Jennings.....	U. of Minn., M.B., 1926	Brainerd, Minn.
Wellbrock, Wm. Louis Anton.....	Med. Coll. So. Car., M.D., 1920	Rochester, Minn.
Whitman, Winifred Gray.....	U. of Minn., M.B., 1926	1659 W. Minnehaha, St. Paul, Minn.
Williams, Henry Lane, Jr.....	U. of Pa., M.D., 1924	Rochester, Minn.
Williams, Thos. Bertram.....	Stanford, M.D., 1925	Rochester, Minn.
Yater, Wallace Mason.....	Georgetown, M.D., 1921	Rochester, Minn.
Ylvisaker, Ragnvald S.....	U. of Minn., M.B., 1926	1371 Portland, St. Paul, Minn.

BY RECIPROCITY

Butzer, John A.....	Marquette, M.D., 1924	Mankato, Minn.
Florin, Alvin Christian.....	U. of Ill., M.D., 1926	732 8th Ave. So., Minneapolis
Frederickson, Alice Crooks.....	Coll. Med. Evangelists, M.D., 1924	Morton, Minn.
Frederickson, Guy Uriah Yale.....	Coll. Med. Evangelists, M.D., 1924	Morton, Minn.
Grier, James Parkes.....	Northwestern, M.D., 1925	Rochester, Minn.
Hane, Richard Lincoln.....	Ohio State U., M.D., 1924	Rochester, Minn.
Henry, Martin Rudolph.....	U. of Nebr., M.D., 1925	Cambridge, Minn.
Hotz, Edward Janus.....	U. of Iowa, M.D., 1920	Gaylord, Minn.
McCuskey, Chas. Fletcher.....	U. of Tenn., M.D., 1918	Rochester, Minn.
McDaniel, Samuel P.....	Emory, M.D., 1916	Mt. Iron, Minn.
Martin, Clement Leon.....	Creighton, M.D., 1916	Rochester, Minn.
Olson, Carl Theodore.....	Rush, M.D., 1919	Wyndmere, N. D.
Reddick, Charles Edgar.....	U. of Louisville, M.D., 1924	Rochester, Minn.
Ryan, Carlton James.....	Marquette, M.D., 1925	Brainerd, Minn.
Wilson, Arthur Nash.....	Rush, M.D., 1925	Warroad, Minn.

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TRAUMATIC NEUROSES*

BY DONALD A. NICHOLSON, M.D.

SEATTLE, WASHINGTON

Regardless of all that has been said and written on the subject of traumatic neuroses there are to-day many men who look with suspicion on such a diagnosis. No doubt they have good reasons for their views. I have, personally, more than once seen cases where such a diagnosis was not justified but merely represented a term to cover up some other condition or to create a condition which did not exist; yet I also know that many times a diagnosis of an organic lesion is made when the condition is a functional one.

While the title of this paper assumes that there has been a trauma in all the cases cited, I have no intention of attempting to describe the same with the pathological findings and the symptoms occurring in different portions of the body or the nervous system. There are plenty of reference books which will give you all the information needed to make a differential diagnosis of such lesions if you but refer to them.

I do wish to give some time to the mental attitude arising in different patients following an injury. I use the word "mental" because the condition usually present in a traumatic neurosis is the result of a mental attitude.

I wish to present certain cases, some acute, some chronic; some associated with and some without litigation; some occurring suddenly, some developing slowly, but most of them the result of suggestion, although it is not always easy to trace the source of the same. Many of the sug-

gestions represent fear or desire and they produce an emotional reaction which varies in intensity according to the characteristics of the individual, whether he is slow and inactive; quick and emotional; sensitive and easily led; stubborn and suspicious; or whether his physical state plays a part in his reactions.

This brings to mind the fact that a study of this subject is principally a study of individuals. Suppose, therefore, for the time being, we leave the individual injured entirely out of the picture. We have to consider his relatives and their influence on him, which may or may not be in proportion to the degree in which they are dependent upon him for their support. Take his friends and the advice which they are constantly giving. Has anyone ever found it to hasten the recovery of such cases? Then we have his legal advisors to consider and the medical attendant who should control very materially the attitude assumed by his patient.

Yet there may be another angle to our problem if we have those responsible for the trauma injected into the case through their financial, legal, and medical representatives. Each individual whom I have mentioned may have a part in creating the symptoms, as well as making the diagnosis.

Probably it is our failure to consider the many phases which may be opened up by these different individuals that causes our physicians and surgeons, both in and out of court, to express so many positive views with which others find it

*Read before the South Dakota State Medical Association, at the Forty-fifth Annual Meeting, Aberdeen, S. D., May 19, 1926.

hard to agree. I have heard men say, "If you know anatomy you cannot be mistaken." Others have said, "If you know pathology and the changes which take place following an injury you must know what to expect." I should like to say that while a knowledge of both anatomy and pathology is very valuable, unless you couple with it a knowledge of human nature you will not always find your judgment good in traumatic neuroses.

Some people smile at the word "suggestion," and do not realize that our whole education is derived from suggestions acquired through our special senses, which, when arranged in an orderly manner, become the bases for our belief and control our conduct.

But certain people are more open to suggestion than others and at times may become dominated by a group of ideas which refuse to harmonize with other ideas which govern their actions under normal circumstances. Therefore, there may be brought into the field of consciousness an idea which holds place so firmly that the person acts, for the time being, as another individual. Or there may be elided from the field of consciousness a certain period in the individual's life. Or certain functions of the different organs may be cut out so that the individual will act as if these parts did not exist. Or one part may hold such a prominent place in the field of consciousness that the individual is unable to remove it.

The first case which I wish to report is that of J. B., whom I first saw about 12 years ago. He gave the following history: age 42 years; born in England; early occupation that of physical director for boys. General physical condition good until about two years before when he was caught between two street cars, bruising the abdomen. He was taken home, suffered pain, nausea, and vomiting. After a few days he was removed to the hospital, and his appendix was removed. He continued to vomit. The pain continued.

Many weeks later a second abdominal operation was performed for supposed gall-bladder trouble. This did not relieve the pain or the vomiting. Many months later a third operation was performed for adhesions.

Before the third operation he was shown by his surgeon in a clinic in the hospital at Vancouver, B. C.

Some months after the last operation, with vomiting and pain still present, he suddenly developed a flaccid paralysis of the left half of the body. Two weeks after this he was transferred to Seattle, where I saw him at the request of the Associated Charities.

He had been in a Canadian hospital for practically two years. His wife was at work, and his children had been sent to different Homes. The man was completely discouraged and felt that there was no possible hope for his recovery. A diagnosis of hysteria was made, and the treatment started along this line. It was but a short time before the vomit-

ing ceased. Within a few weeks there was motion in the paralyzed arm and leg, and there was a return of sensation to this part. In the course of six weeks this man was up and around. Naturally, it required several weeks for him to regain his normal weight and strength because it takes time to recover from a long illness such as he had been through. At the end of a year he was back at steady work, his children were brought home, and there was no need for his wife to continue her outside work.

There was no lawsuit in this case and no liability claim. Here the emotional element was due largely to fear, the fear that he had received an internal injury. Following each anesthetic there were, of course, nausea, vomiting, and pain so that he was not relieved of the symptoms of which he complained, but rather these symptoms were continued, following each operation. When this state of affairs was explained to him and suggestions made that he would have no more vomiting, the result was a cessation of the vomiting and pain. Suggestions were soon made along the line of returning motion with the same result.

It is interesting to note that a few years later he was shot in the right hip and the next day it was found this leg was paralyzed with complete anesthesia from the hip down which did not clear up for a few weeks and then only because it was recognized and treated as hysteria. I see this man from time to time. He is perfectly well, working regularly and caring for his family. He is very grateful for what has been done for him, and his case has impressed me particularly because several competent physicians and surgeons had examined and studied him. They had no motive in keeping him in a charity hospital or in operating on him. It may be if his early symptoms had represented loss of sensation and motion of an extremity it would have been detected, but the symptoms were nausea, vomiting, and abdominal pain. The failure to recognize the cause was responsible for much suffering, needless surgery, a great expense, and a scattered family.

About the same year I saw a man in the King County Hospital with a flaccid paralysis of the legs; no change in deep reflexes; some atrophy of disuse; loss of sensation from the hips down; in bed eight and a half years following an injury to his back while employed on the streets of Seattle. There was no litigation and there were no relatives. He simply passed from one service to another in the hospital as a helpless paralytic.

After a careful examination this man was treated as a case of hysteria and recovered in the course of a few months. He left the hospital and for quite a time afterward had a small fruit-store near there.

This case was hard to handle for he and the other patients, as well as the nurses and attendants, knew he had been paralyzed for years and could not stand or walk. I had to put him in a private room and rigidly exclude all visitors while our educational program was being carried

out in order to exclude unfavorable suggestions. But when results were obtained everyone became a booster, and he was put back on the ward.

Let me now take up two acute cases:

A. F., aged 20, married, while working in the woods, complained that his back pained him. His partner, an old man, remarked, "If it was my back I would say—age; but being yours means you have hurt it." Shortly after this, in straightening up, his back caught and he fell forward. Others came to his aid and, suggesting he was paralyzed, picked him up and sent him to a hospital where he was examined and found to have a flaccid paralysis of the legs with anesthesia from the hips down. The diagnosis was hemorrhage into the cord, and it was concurred in by a very competent internist. Yet ten days later I examined that boy in my office and found him perfectly normal; no sensory or motor disturbance. He was puzzled as to how his legs changed position in his sleep, for he would have no recollection of drawing them up or moving them in any direction.

This case represents the emotional influence of fear, the outsiders' part in making a diagnosis, and the rapid recovery of an acute case. He received from the Industrial Insurance Commission compensation for the few days out of work and made no claim for disability.

The other case is somewhat different. It is that of a brakeman from Montana, who had a fall on his back with bruises about the lumbar and sacral regions. Finding he could not get up he was picked up and taken in a car to a hospital, where, on examination, it was found he could not move the legs, undoubtedly because of pain. After a day or two this pain was so severe that no motion could be had in either leg, nor could he be turned in bed. He developed an incontinence of urine, undoubtedly from over distention. He was then placed in a cast. The condition was accepted as a cord injury with a spastic paraplegia of the lower extremities. There was a hyperesthesia from the waist down.

Shortly after this his attorney entered into the case, and the railroad company offered to settle for \$5,000. Suit was started for \$40,000. While the suit was pending this man was removed to Seattle at the request of the chief surgeon of the company.

On examination, some six weeks after the accident, I found a spastic paralysis of the lower extremities with hyperesthesia from the waist down, equally so on both sides, and a distended bladder with incontinence of urine. There was no special atrophy of muscles; knee-jerks were

exaggerated; Achilles slightly over-active; no clonus and no Babinski. X-ray of the spine was negative. The general physical examination convinced me that this was a case of hysteria, and not an organic cord lesion, as suspected, and the patient was handled on this basis.

In such a case we are often puzzled as to whether we have a true hysterical condition or whether the individual is assuming the condition for financial reasons. And it has been my custom in such cases to leave the question open in my own mind and to proceed with my suggestions along the following lines: first, place the patient in a private room away from all other patients, friends, relatives, advisors, examiners, and others, and put in charge a competent nurse who will fully carry out my suggestions.

The first day a careful history is obtained with a superficial examination. The second day a more careful examination is made, and the third day the history is checked while the examination is being made. In the meantime he has been given the best of general care by the nurse.

At the end of the third day I explain to him that such conditions may arise from two causes, first, an actual injury with the destruction of tissue; second, an actual injury followed by a functional disturbance. I inform him that from my examination I am convinced that we have no actual injury to parts, but are dealing with a functional disturbance, but that I cannot determine whether this functional disturbance is actually the result, first, of an injury and then of suggestions honestly acted upon which have prevented him from moving this part, or whether he is purposely preventing motion in this part in order to make others believe that he has an actual injury so that he may gain financially thereby.

I then inform him that if the condition is an honest one my explanation will remove the wrong ideas, and he will cease to act upon these wrong ideas, will understand the true condition, and begin to act upon it. Therefore, each day will bring improvement, as outlined on the previous day, and within a short period of time he will be acting upon proper information and not upon false information and will soon return to his normal condition. But that, if he is purposely doing this, there will be no improvement because he does not desire to follow my instructions or to recover.

I tell him that if the former condition is true and he recovers I shall report him as an actual injury and no doubt the people responsible for the injury will be willing to pay him for the amount of injury that has been present, the time

lost, the cost incurred, etc., but that, if I get no response at the end of a few days, I shall know that he is assuming the condition and shall dismiss him and have nothing further to do with the case and shall report him as a faker, in which case, undoubtedly, all thought of settlement will end at that point.

You understand that such a statement could not possibly be made to a man until, by examination and by treatment, we have obtained his confidence and convinced him that we are treating him honestly and trying to do the right thing by him.

I must admit that some of these cases have recovered, leaving me still in doubt as to whether they were fakers or not, but I do not worry a great deal about this because what I was looking for was a recovery.

Within three weeks this man was up and about. He made a settlement with the railroad company and was ready to go home before his legal advisor knew what had happened. It illustrates the fact that these cases do get well while litigation is pending and while favorable litigation is pending.

Next we have two young girls. The first, 14 years of age, had been taken, eighteen months before, to the office of a physician for a tonsillectomy. She waited in the reception-room a period of an hour or more, during which time other cases were being operated on. She heard a patient cry and struggle, and saw his gown blood-stained. It frightened her so that it was very difficult to get her under the anesthetic.

Following the operation she was put to bed. She seemed extremely nervous. During the night she awakened with a feeling of something having snapped in her head. She could not move her right arm or leg. The next day it was found that she had complete anesthesia, with flaccid paralysis, of the right half of the body, including the face. This remained as a flaccid paralysis with complete anesthesia for several weeks. Then, suddenly, it changed to a spastic condition. Sensation had returned.

For months she was unable to walk. Gradually she regained the power to walk, and at the time of my examination, some seven weeks ago, I found that she walked quite normally, with no spasticity and no contractures or unusual limitation of motion at ankle, knee, or hip. There was no atrophy. The right arm presented athetoid movements, most marked in the fingers, wrist, and forearm. The pectoral muscles were firm and tense; the arm was held close to the side.

Any effort at movement was exaggerated and accompanied by considerable excitement. There was no sensory disturbance and no atrophy present.

I placed her in a sanatorium, and in the course of three weeks the improvement was extremely satisfactory. She could move this arm fairly well; the muscles were relaxed; there was a tendency to hurry in the movements, and when she did this there would be produced irregular jerking.

She had been examined by many physicians, and the opinion had been freely expressed that it was a cortical lesion and that she would probably not recover. The parents had been advised to have a decompression as the only hope of helping this young girl.

Here fear was the dominant factor in cutting out of the field of consciousness the right half of the body so that for a time it was as if not a part of her. Then gradually it was brought back into the field of consciousness where it was so firmly held that she was unable to move it without being so self-conscious of it that she could not control it.

There was no injury in this case, but decidedly there was a psychic trauma, which was not in the least helped by later examination and the unfavorable prognosis which was given. Massage, rest, encouragement, and re-education constitute her program.

The other case is that of an Italian girl, 14 years of age, living in a small mining town, who was to be taken to Seattle for the removal of tonsils and adenoids. She was very fearful of this operation and much opposed to leaving home. While playing on the school-house steps she fell and struck the back of her head. She was picked up in a dazed condition and carried into the school-house and from there taken home in a machine.

Her people were excitable, they called a physician who found her complaining of a great deal of pain in the back of the head. She did not want to be touched. She talked but little, and the following morning she would not move the left arm or leg; they were also hyperesthetic. There was apparently complete deafness.

She continued in this condition for about two weeks, at the end of which time I saw her. I found that they had been writing to her and that she would answer orally. There was a spastic paralysis of the left half of the body; the hand was closely clenched; the finger-nails quite long and the tissue in the palm of the hand macerated;

the left half of the body was extremely sensitive so that the least touch brought forth an exclamation of pain.

She was moved to a sanatorium, and I visited her in the middle of the night, stamped on the floor of the room in which she was sleeping, and even rang a bell, but no evidence of hearing was obtained. Yet when I touched the left arm she awakened in pain, showing that the least touch caused her to awaken, whereas no noise, however loud, disturbed her.

This girl recovered in the course of about ten days, at the end of which time she was up and running around and hearing distinctly. A diagnosis of hysteria had been made, and the treatment was along the line of suggestion. Naturally, the cause here was a strong desire to be unable to go to the city, and the suggestions made to her as to the severity of the injury helped a great deal.

This illustrates the marked effect that desire may play in the emotional state of an individual. It again illustrates the rapid recovery which may be expected in a case where the illness is of short duration, the marked condition which may be produced where there is no thought of litigation, and, lastly, the effect of suggestion in relieving such a condition.

In this case I took advantage of what I observed in her the first day in the sanatorium, namely, her fear of the Japanese boy who swept her room. I made occasions to have him work in her room more than necessary. I also refused to allow her friends to write to her. All orders were given in an ordinary tone, and the Japanese boy was sent in often to explain things to her. She seemed very anxious to have the nurses do the explaining. After hearing was restored it was quite easy to take care of the paralysis.

The next case is one where there was elided from the field of memory a certain period in a person's life, with the undoubted calling of past events into the field of consciousness so strongly as to occupy it completely until other events were introduced by suggestion.

Mr. W. T., on July 27, 1915, was found in a field in the Duwamish Valley, and taken to the King County Hospital, where he answered questions by writing or in a very low whisper. He gave his name, his age, and his history prior to 1902. He thought he was in a hospital in South Africa and that it was the year 1902. There all memory ceased.

He was informed that he was not in South Africa, but in the King County Hospital, near Seattle. This he accepted, and from then on for

the next three weeks he talked very slowly, indistinctly, and in a whisper, and he denied any recollection of what had occurred between 1902 and 1915.

I first saw him three or four weeks later, and after an hour's interview he talked in an ordinary tone, clearly and distinctly; and at the second interview he traced minutely his full history, which was as follows:

Age 50, employed as a laborer and engineer; in 1889 he enlisted in the British Volunteer Army; in 1902, while in South Africa, on a scouting party, he was fired on, his horse stumbled, throwing him to the ground. He was taken to the hospital where he remained for many weeks, during which time he was unable to talk. After his recovery he returned to England and in 1907 moved to Canada. While there he had a severe injury, fracturing some ribs, and was in the hospital for seventeen months. The past three years he had been subject to headaches, which would last from two to four days and occurred at intervals of four to six weeks.

In the spring of 1915, being out of work, he set out on foot in search of work through the Duwamish Valley. He worked on one or two farms on the way. One very hot day he stopped to get a drink at a well. Pulling up the rope he found a pail containing several sticks of dynamite. Replacing them he went to a river near by and, while attempting to reach the water, slipped and fell into the stream. He removed all of his clothing and placed them in the sun to dry and then lay down to rest. He was awakened with a severe headache and the feeling as if shots had been fired. He was unable to get up and felt very sleepy and drowsy. While in this condition he remembers that a man came to look at him and went away, returning with others who put him in an ambulance and removed him to the County Hospital. He seemed to recognize this place as a hospital, but thought that he was in South Africa. He was told that he was in the King County Hospital, but he could not remember leaving the hospital in South Africa, and no one being able to fill in this gap it remained elided from the field of consciousness until he was brought to my office.

First my suggestions were directed toward the return of his voice so that he might be able to answer my questions. Having accomplished this at the first visit, on the following day I filled in the period which had been elided. As he was a British soldier and had worked in camps during the recent war it seemed natural that he would have discussed the war. I asked him to

give me the name of the German with whom he had argued so much on the war. Quick as a flash the name was given, and then by a series of questions as to where he was living at the time, whom he was working for, who was present, how long he remained there, and where he went from there, etc., I was able to trace him to the time when he left Seattle to go through the Duwamish Valley, and to complete the history which has already been given. I told him plainly just why this period had been blotted from his memory and that having recalled it he would retain it.

He remained in the County Hospital, working, for many weeks, without dropping back to the old state. When last seen, about two and a half years ago, he was still in a normal state.

I do not know whether there was any hysterical manifestation associated with his illness in South Africa or, later, in Canada, but I do know he was subject to headaches and was rather worried before the events which led up to the suggestions that elided from the field of consciousness that period between 1902 and 1915. In this case there was no litigation, no trauma, an acute onset caused by conditions suggesting past events.

The cases which I have reported belong to the hysterical type and have been represented by one of two conditions, spastic paralysis with hyperesthesia, or flaccid paralysis with anesthesia. In the spastic paralysis we may assume that through suggestion the part has been brought into the field of consciousness so strongly that it is firmly held there, and the desire to have it left alone creates the hyperesthesia, which means that you must not touch this part, it is painful, I cannot move it, and no one else must,—a mental attitude which has to be corrected.

In the flaccid paralysis, anesthesia is, naturally, because the part is as if cut off. You may pick it up, throw it about, or do anything you wish with it. It does not belong to the patient and he has no control over it, therefore your work in this case is to correct this idea by again coupling up this part with the field of consciousness.

As I have already said, such conditions are caused by suggestion; therefore, they will recover through suggestion. But this does not mean that any suggestion will help them. The proper suggestion must be given under the proper conditions, and the suggestions must be based upon common sense, as well as upon scientific knowledge. The confidence of the patient must be obtained if you are to have his co-operation in this work.

Many physicians assume that the only sug-

gestion necessary is to say, "You are all right; there is nothing the matter with you. It is just nerves. You just think that this is so. Now go away and forget it." It would be just as reasonable to tell your surgical patient, "You have a gall-stone. All you need is to have it cut out. Now go home, get yourself some instruments, and have someone help you do it."

I wish now to give a little time to another phase of the neurosis which includes the type of cases we class under the heading of neurasthenia. Here we find three well-marked classes: first, the person who has been unstable for years but who, following any injury, worry, or excitement, has his nervous symptoms exaggerated; second, the normal person who, following a slight or a severe injury, soon develops evidences of a neurosis which is liable to continue for an indefinite period of time; third, the person who has had rather a severe injury with pathological findings and who, as a result of loss of time, loss of money, worry, fatigue, pain, and a prolonged illness, develops a neurasthenia secondary to this condition.

As an example of the first type I wish to report the following case: Mrs. D., who for years had been nervous, suffered from palpitation; pulse always over 100, tired easily; had occipital pains; and slept poorly. A toxic goiter was removed, but gave only limited improvement.

A year after this operation she was struck by an automobile, suffered slight bruises, and was taken to a hospital and put to bed. I saw her a few days later and on several occasions for the next few weeks. She was emotional, had an extremely rapid pulse, was sleepless, and her principal worry was that all her time and money had been spent in getting well, and now the accident had upset it all and she had no money left and it would be impossible for her to stay in the hospital.

I was able to convince the insurance company that delay and litigation in this case would be bad, not only for the patient but for them, and if they admitted liability the money spent now would be a good investment. I convinced her that as her principal worry was financial and that was to be taken care of by the company, that if she would go away with a competent nurse for a few weeks she would be better than she had been prior to the accident, for she needed this extra care to make her well. She followed this advice, and it was surprising to see the speed with which she recovered. In fact, she was much better at the end of a few weeks than she had been for several years prior to the accident. Of course, I did not attribute the improvement

to the accident; but I did attribute it to the fact that she was able to obtain the extra nursing and rest and care that she needed in order to improve her condition.

As an example of the second type, let us take Joseph H., age 46, a well-nourished, healthy appearing office man, who was hit by a motorcycle and dragged along the street, tearing his clothing and bruising his face, shoulder and hand. He was not rendered unconscious, not confined to his bed, but remained away from work for a week or so. Several physicians and claim-agents examined him, discussing the extent of his injury and the responsibility for the same. In the course of 60 to 90 days satisfactory settlement was made.

I first saw him some four months later, when he stated he was not sleeping well and that while his appetite was fair he was fifteen to eighteen pounds below weight. He was uneasy, lacked confidence, especially when on the street. He did not apply himself to his work. Complained of tiring easily. Examination was negative with the exception of over-active reflexes, increased pulse rate, and slight tremor of the hands, and he was rather emotional. Leaving the injury out of his history we would say he was overworked and needed a rest. After explaining to him that the injury was the cause for thinking about himself, his acts, other people, and their part in his trouble, what they thought, and their advice, all of which interfered with his sleep, his work, and his normal mental activity, we advised a rest from work and people for a time.

This shows how a healthy man may be upset by directing and keeping his attention in wrong channels. Had he himself been responsible for the accident, no doubt he would have recovered within a few days without any more thought of it.

As an example of the third type I will report the case of Tom D., age 36, single, employed as a woodsman. About a year ago he was hit by a falling tree, receiving a fracture of the skull extending from the frontal region back to the occipital region, on the right side. He was unconscious for two weeks and remained in the hospital for about two and a half months, after which time he was up and about.

I first examined him about four months after the accident. He then complained a great deal of dizziness, confusion, some deafness in both ears, inability to work, and forgetfulness. I have been observing this man for several months, and there has been a gradual improvement in his physical state. His eye-grounds have been negative. Cerebrospinal pressure has been normal.

General physical examination is negative; but he complains of irritability, restlessness, inability to apply himself at work, and an inability to remain in crowds. He has accepted one or two light positions, but remained at work only a very short time as he was irritable and complained of some dizziness and headache.

While the condition does not show any definite mental symptoms he complains so much of weakness, tiredness, irritability, and difficulty in applying himself to his work that I feel we are dealing with a secondary neurosis.

I want to report to you just one more case, that of a young Australian who had received an injury to the left forearm necessitating its amputation. There was a painful stump which required another amputation with a still painful stump. I would not venture to say how many operations there were in this case. I know that his case was reported in the *London Lancet* several years ago, and probably some of you have seen the man as he was going from state to state calling on the medical societies, offering himself for a clinic. And it was while in Seattle, before our Society, that I first saw him.

Later he was sent to me by one of the local surgeons because he was considering another operation, and for the further reason that he was taking morphine rather freely to relieve the pain. On this occasion I talked with him for some time, advising him that he was merely drifting into drug addiction and giving himself no opportunity to get well and that the pain of which he complained was, to my mind, purely mental and the result of the continued illness he had been through, with its numerous operations. I felt that if he would go away, get to work, and build himself up and get away from drugs and stop showing himself before medical men he would recover without any further operations.

This man found a position in a nursery where he worked out doors. And in about a year he called on me, an entirely different person, declared he had taken no drugs since last seeing me, that the pain had gradually disappeared. He had gained thirty to forty pounds, and at the time of calling he was employed by the Veterans' Bureau as an instructor for disabled soldiers.

While I have no way of knowing, I am strongly of the opinion that had the same course been followed much earlier it is probable this painful stump would not have called for as many operations as were performed.

I have made no effort to discuss the general subject of neurasthenia with its numerous causes and many physical and neurological findings. I

am simply trying to tell you that trauma is sometimes a cause for exaggerating a pre-existent neurasthenic state; and, when it is, it is clearly our medico-legal duty to estimate as closely as possible the pre-existent condition and then estimate what has been added to it by the trauma. For it is unfair to charge the one responsible for the trauma with the full condition, yet this is often what happens, and if we are careful to avoid this there will be fewer medical opinions stating it will take years for a recovery, or that the patient may never recover from the effects of the accident.

The average person in good health before an accident which leaves no pathological condition

is going to get well in a comparatively short time if properly managed. The one with pathological findings and neurosis grafted on it may reasonably expect an improvement as regards the neurosis, but we must remember that, if the pathological findings cannot be removed, our prognosis is not so favorable.

In closing I wish to leave one thought, namely, that, regardless of how careful and thorough you are in your examination and regardless of what you do to correct the pathological condition, you will often fail to get a full recovery unless you study and attempt to understand the mental attitude of your patient and have sufficient patience to give the time necessary to correct the same.

INFLAMMATORY AFFECTIONS OF THE MIDDLE EAR: A RESPONSIBILITY OF THE GENERAL PRACTITIONER*

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Of the many conditions generally conceded to be within the province of the various specialties, inflammatory affection of the middle ear has been, is, and will probably continue to be, during at least part of its course, a most serious and heavy responsibility of the general practitioner; and a full, sound knowledge of its symptomatology, pathology, complications and surgical indications is most necessary for his protection, as well as essential for the welfare of the patient. Especially in the smaller communities, where a trained ear man may not be available, and also in the larger communities, the greater number of inflammatory ear patients are under the care, guidance, and direction of the family physician or the pediatrician at first and until some unusual, more alarming, or serious phase of the trouble comes on. If up to and including this period the attending man could be fortified and balanced by a good, wholesome understanding of conditions present, and conditions possible and probable, a most welcome safety zone could be established for all concerned, and considerable of the present large toll in health and hearing function could be curtailed.

Let us very grossly review the anatomy and physiology of the middle-ear system, and then return to the etiology and pathology of these inflammatory affections.

In the anatomy, well illustrated by this schematic chart, the three portions of the middle-ear system are cleverly shown; namely, the Eustachian tube, the tympanic cavity, and the mastoid labyrinth.

The Eustachian tube is, for clinical as well as anatomical purposes, divided into the pharyngeal portion, the isthmus or middle portion, and the osseous or tympanic portion.

The tympanic cavity we shall divide, for our own purpose of description, into the tubal opening, the cistern of the cavity, the attic of the cavity, and the zygomatic cells (occasional extension cells) forward.

The mastoid labyrinth we shall also divide, for our own purposes of description, into the antrum of the mastoid, the anterior marginal chain cells, the tip cell and the posterior marginal chain cells. The mastoid labyrinth as a whole can be of the pneumatic type, where the above division is easily demonstrated, or of the diploëtic type, where such division is not to be made out so easily.

The physiology of these structures, to refresh your minds, is in case of the Eustachian tube that of ventilation and drainage of the tympanic spaces. This tube is the one and only portal of ventilation, and after its closure from any cause whatsoever a negative pressure in the middle-ear spaces very soon ensues. In its function of drainage the Eustachian tube, as is also true in the case of the mastoid and most of our para-

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nasal sinuses, now that we are up on our hind legs in the process of evolution, does not provide direct gravity drainage from the tympanic cavity, for you will notice that it is not situated at the lowermost portion or at the floor of the cistern of the cavity, as is very commonly pictured. As a consequence much of the drainage, in our present evolutionary state, must depend upon the lifting action of the ciliated epithelium, which under conditions of health is sufficient, but which when overwhelmed by exudative flood is inadequate.

The physiology of the tympanic cavity can be regarded as a free-air housing of the ossicular chain for transmission of sound—free-air, I repeat, because the air pressure therein is under the control, in the absence of pathology, of the action of our pharyngeal and palatine muscles.

The physiology of the mastoid labyrinth can be regarded as that of an air-buffer for the equalization and modification of air pressure, and also as that of a resonance space.

Returning to the etiology and pathology of inflammatory affections of the middle ear, I think we can safely say that the greatest contributing cause of these is the unnatural atmospheric-temperature living conditions that we, in our modern living and working quarters, are subjected to, with the added and resultant respiratory infections superimposed. In the scheme of creation surely it was never intended that the animal organism should live at one and the same time, or alternating hourly, in the frigid zone and in the torrid zone; and no respiratory threshold or vestibule, as the nose and throat really are, can possibly adjust itself to such precipitate and oft-repeated change of temperature as it is called upon to do when we go back and forth, in and out-of-doors, with an alternating temperature of 75° above and 25° below zero. The Indian in his tent had no such unnatural temperature conditions, nor did he have much nose and throat and ear trouble until he came to live during the winter in the white man's "summerized" house. Nor do we or our patients have much nose and throat and ear affection during the even temperature of summertime.

I have dwelt considerably upon the foregoing atmospheric-temperature conditions merely to lead up to the almost single condition causing middle-ear affections; and that is, congestion and engorgement of the nasal mucous membrane extending by contiguity into the Eustachian tube, and there, by closing tightly its lumen, stopping all ventilation of the middle-ear spaces. Just here begins our pathology in the ear. The spaces

now becoming air-tight, the air is absorbed from them, and by negative pressure or vacuum the tissue fluid (serum) is drawn from the tissues to fill these spaces, and we have the most perfect culture medium imaginable: heat, moisture, albuminous and sugar fluid for infectious bacteria to grow in; and they do grow, and we have a middle-ear abscess in an air-tight cavity. As the pus forms it begins to fill the cistern from the floor up, and up, if not liberated by paracentesis or early rupture of the drum membrane, until it reaches up into and among the rafters of the attic; and there we have a condition not easily relieved, for, by reason of the contained structures in the attic, the ossicle ligaments and their hammock-like covering of mucous-membrane folds, we have retention leading to necrosis with extension over and into the mastoid antrum.

From the mastoid antrum let us further follow the spread and extension of the infection. Here we see how, by gravity, this infected pus percolates downward through the anterior marginal chain cells to the tip cell. From the tip cell drainage up hill is poor, and the infection spreads backward, involving the labyrinth proper, until it reaches the posterior marginal chain cells. Now we are in real trouble, for the posterior marginal cells surround the lateral or sigmoid venous sinus, and we get a perisinuous abscess followed by thrombosis in this big venous sinus, plugging it downward and extending into the jugular vein.

The above description pictures the course and progress of probably what is the commonest termination of an acute, severe affection, but many other possibilities are also present in the rapid extension of acute disease. A very virulent infection can, before nature has had time to build up her pyogenic barrier, penetrate to the brain membranes, and meningitis may result very early. Labyrinthitis, or internal ear involvement, too, under similar conditions, can be an early complication; and facial paralysis can be in evidence during the first few days of such a virulent infection. Usually, after some interval of days, extradural abscess may be determined; and, although brain abscess may start early, its presence is not made out for quite an interval. As a continuation of an extensive lateral sinus involvement cavernous sinus thrombosis may result, an inoperable and fatal condition.

Soon after the onset of earache, in the early hours of a middle-ear abscess, after the normal markings of the eardrum have disappeared, and at the first sign of bulging of the drum, a liberal and properly located incision of the drum may be the means of averting any or all of the above-

described serious and dangerous pathology. Paracentesis should never be delayed an hour when the indications are there, and should be a free, long incision in the posterior half of the drum in its lower two-thirds.

The small, mere puncture incision, so commonly done by the pediatricians without anesthesia, is little better than none at all, and gives a false feeling of security directly chargeable for many a mastoid surgical case later. A properly made paracentesis cannot be done without anesthesia in children, and is of full and sufficient importance to justify the necessary anesthesia.

It is not a theoretical proposition, by any means, as you can easily demonstrate on this chart, that early and adequate drainage of the cistern of the tympanic cavity may and usually does keep the troublesome attic region from being contaminated; and we have pointed out that from the involvement of this very attic region, with all its intricate pockets for retention, practically all of our grave and serious trouble originates.

Further, and in line with this thought, a patient with a known oncoming exudate in his tympanic cavity should be encouraged to avoid the extreme horizontal position by the use of high pillows, as by gravity, with his head low, and especially lying on his back, the exudate tends to run not only into the attic but into the mastoid cells, as well.

Right here let me call your attention to the importance of posture in your pneumonia and typhoid patients. Many years of observation in our City Hospital wards have proved it. We all are familiar with the frequency of middle-ear abscess in these patients, but, I am sure, not all of us realize that such trouble is directly the result of hypostasis or localized dropsy in the middle-ear cavity. Lying so long in the horizontal position, with their heads low, and at a time when their vascular tone is flabby and leaky, the seepage of serum into the middle-ear cavities takes place, similar to hypostasis in the lung bases and pleural cavities, and, affording an ideal culture medium, middle-ear abscess is the usual result. The heads of the beds of these patients should be elevated, and pillows within reason should be encouraged, in an effort to keep clear of hypostatic seepage into the middle-ear spaces.

How to abort an oncoming ear abscess, and how to relieve the earache of such an oncoming abscess, would be welcome information to all of us, I am sure, but, unfortunately, it is seldom within our power.

If the patient is seen very early after the first shooting or piercing pains, irrigation with a

gentle stream of hot water against the drum, just as hot as can be borne, seems to be more efficient than anything else that I know of, and should be repeated at intervals of an hour or so until the pain leaves and does not recur. Of course, the drum should be known to be whole and intact, as the irrigation of an ear with a defect or large perforation would only disseminate what infection might be there. A fountain syringe with a small point can be held slightly higher than the ear, and hotter water added as the patient tolerates it until it is as hot as the fingers can bear. If the heat, best applied through the medium of the irrigation water, is not successful in aborting the oncoming abscess, nothing else will be, and it is only in the very beginning of the trouble that there is any chance of success at all.

When it is apparent that the abscess is there, by the bulging of the drum, paracentesis should be done without delay, and the ear kept clean of discharge by the dry method. Wiping out the canal and external ear with dry cotton as often as the discharge accumulates is the best and safest way of cleaning the ear. Irrigation may disseminate the infection throughout the attic and farther in case of the existence of a defect in the drum, and usually brings on furunculosis of the canal with a troublesome eczema about the ear from waterlogging of the skin. In case of erosion of the skin about the ear from an irritating discharge, 5 per cent ammoniated mercury ointment is beneficial. The efficacy of laudanum and other such drugs in the ear for earache is a myth, and the relief generally ascribed to their use is due to the rupture of the drum with the resultant relief from pressure. Hot oils and carboglycerin especially are only a hindrance to the proper inspection and interpretation of the drum pictures.

In severe middle-ear infections, congestion in practically all cases extends to the mastoid antrum at least, if no farther, and pain and tenderness behind the ear are usually present for a few days. In the majority of cases, however, the mastoid congestion recedes without suppuration and causes no further trouble, for the time at least. This initial mastoid tenderness, therefore, calls for no surgical interference and need cause no worry unless it increases from day to day and fails to abate and recede after, say, four, five, or six days. Under these circumstances of increasing symptoms the indications are that the congestion has gone right on to suppuration and will have to be relieved by surgery before recovery can be expected.

While initial congestion of the mastoid with complete subsidence and no return of the trouble is the rule in the majority of cases, we are not sure for ten days or two weeks, or even longer, that there will not be a return of the symptoms. This second congestion we know as the late or secondary congestion, and nearly always means surgery.

These ears with late congestion (and we might as well say suppuration) if not opened and drained furnish the cases of complications, such as sinus thrombosis, extradural abscess, meningitis, and brain abscess, within the near future, or, failing this rule, they drift into chronic bone disease with the possibility of intracranial complications at some future time and at any time.

The acuteness or intensity of the initial mastoid congestion depends upon several factors. A serous exudate furnishes always a more violent reaction than a mucous exudate; and a mastoid of the pneumatic type, always a more violent reaction than the diploëtic type. It is easy to understand why this is so. Serum is by far a better and more rapid culture medium than mucus, and a pneumatic mastoid furnishes more mucus surface for rapid extension and resulting reactive congestion than does a mastoid bone of the diploëtic type. Resolution, on the other hand, when it occurs spontaneously in cases of serous exudate and in the pneumatic type of bone, is more rapid and complete. Ear men feel safer with cases of serous exudate than with cases of mucous exudate and, also, with cases of pneumatic bone than with cases of diploëtic bone. While the process is more violent in these types, it is also more frank in manifestation.

Considering the opposite, namely, the cases of mucous exudate and diploëtic bone, an infectious agent that will live in mucus must be a sturdy parasite, for mucus is originally bactericidal. We have, therefore, a smouldering fire, hard to extinguish, and with the additional feature that mucus drains poorly and is not absorbed like serum. In these cases we never know when the fire is out. Diploëtic bone likewise permits of no frank manifestation of inflammatory reaction, has relatively poor vascularization for defense and for absorption, and the dense cortex may house and mask a fire of unknown quantity and quality which may be burning its way inwardly rather than outwardly.

The infective organism is another important factor. Some bacteria are intensely toxic but capable of little or no local destruction; such as the pneumococcus, the streptococcus, and the influenza germ. Many coarse parasites, on the

other hand, are capable of much rapid local destruction of bone but cause little or no toxemia.

The age of the patient is a most decided consideration in the urgency of surgical interference. In children we have early and reliable signs of inflammatory bone involvement, and seldom, if ever, are we taken unawares unless careless and indifferent. In youth and young adults we are, too, comparatively safe in the interpretation of our outer bony signs, but in middle life and in old people the cortex of the bone is so unyielding that grave intracranial processes can be well under way before we are aware of the presence of mastoid disease. Senile bone is like ivory, and the inner table of the skull is far more yielding than the cortex. Therefore, the treachery of mastoid bone disease increases with age.

Acute flareup of old chronic ear disease is a serious condition, and what is likely to happen as a result of it cannot be anticipated. Chronic bone disease means bone erosion, and any of the intracranial complications are possible.

Persistent discharge from ears must come from one of two sources: either from chronic Eustachian tube disease or from chronic attic or mastoid disease. Ear surgery in the first is useless. Taking off the roof of a house to get at a leak in the basement is just as rational as doing a mastoid operation for a persistent discharging ear where the infection is tube-fed. Cleaning up the nose, throat, nasopharynx, and Eustachian-tube pathology is the only chance of curing this kind of ear discharge. This tube-fed persistent ear discharge is more often the condition in children, but chronic attic bone disease is also found in children following scarlet fever. Chronic discharging ears in adults, though occasionally found to be tube-fed, are usually due to chronic attic or mastoid bone disease, and in this kind of pathology the radical mastoid operation is indicated where surgery is done.

The tube-fed ear infections will be found, upon examination of the discharge swabbed out of the canal, to be a mucoid, gummy, stringy discharge, and the defect in the drum may be found to be in its lower portion.

The attic-fed ear discharge will almost always be found to be a most foul, stinking fluid pus, and the defect of the drum may be so extensive as to include the upper half or total drum, with the ossicles gone, as well.

The interpretation of canal and drum findings requires great care. Polyps, granulation, and cholesteatomatous debris should be recognized, together with their significance, and many pitfalls exist calling for care and caution in dif-

ferentiating furunculosis of the canal from acute mastoiditis. Myringitis, or simple inflammation of the eardrum from herpes, may be taken for otitis media. Incarcerated foreign bodies in the ears of children, with the canals so swollen as to mask all landmarks, may be thought to be mastoiditis.

Correct interpretation of the signs and symptoms of the various complications of middle-ear affections are quite possible, and the picture is generally so constant, typical and reliable as to make diagnosis comparatively accurate.

Extradural abscess may develop any time during the course of attic or mastoid disease, acute or chronic, and is manifested by a dull, one-sided headache, and the patient flinches from any jar to his head. The temperature is not much elevated, and nervous and mental symptoms are absent so long as it remains an extradural process.

Perisinus abscess, which is the forerunner of sinus thrombosis, can be considered with the latter. The outstanding signs of these are so typical as to be rarely mistaken. The temperature curve makes a sudden rise, to be followed very soon by a precipitate fall to its former level, and this so-called steeple-jack temperature curve is repeated at intervals of several hours, usually once each day, indicating, of course, pyemia. As the condition matures, and bits of the septic thrombus break into the general circulation, metastatic abscesses are likely to develop.

Meningitis of otitic origin is not different from any other diffuse meningitis,—great irritability, nervous and mental, followed by delirium, head retraction, Koernig's, and other neurological signs,—and generally terminates fatally.

Brain abscess, that is, deep brain abscess, may not be suspected for days after its onset. The patient may be entirely clear mentally when spoken to, but wants to sleep more than usual. Projectile vomiting coming on during sleep and the patient dropping back to sleep immediately are typical of the condition. Later he resists being aroused, begs to be let alone, and again drops back to deep sleep as soon as permitted. The pulse rate drops to 50, 40, and even lower, and the patient dies in profound coma unless the abscess is located surgically and drained. The usual location of the abscess is in the middle fossa, but often, too, it is found in the posterior fossa.

Labyrinthine involvement furnishes such typical symptoms as to be unmistakable. The patient usually experiences booming noises in his head; intense vertigo comes on; vomiting and rotatory nystagmus of the eyes complete the picture.

Facial paralysis may come on early in the initial congestion. This generally is a toxic neuritis, and clears up after relief or resolution of the ear condition. Facial paralysis coming on in chronic bone-disease cases generally is due to erosion, and recovery from the paralysis is very doubtful.

Bezold's abscess is due to the descent of pus down and into the sheath of the sternocleidomastoid muscle as a result of erosion through the tip of the mastoid bone.

Cavernous sinus thrombosis, an extension through the petrosals from the lateral sinus, is a fatal condition. There is a proptosis of the eyes, first on one side and then on the other, from practically complete venous stasis at the base of the brain.

In presenting this paper to you, I am conscious that I have told you nothing that is not entirely familiar to the trained ear man, but the paper was not written for his entertainment, and, if it shall have proved helpful to the general men for whom it is intended, I shall be content.

DISCUSSION

DR. M. B. RUUD (Grand Forks): I have not very much comment to make on this paper. It seems to me a very appropriate paper for all of us, for we all need a review of this subject. I think if our young men would learn that paper by heart they would know a great deal more about the subject. These cases happen every day. They do not happen in the city or in the hands of the specialists only.

The paper is very interesting to me because I think we have gone through one of the most remarkable epidemics of ear trouble in this country that I have seen in years. I have seen more discharging ears in the last three months than I have seen in many years. Just why one epidemic of the "flu" would furnish more ear trouble than any other, I do not understand.

Any one who listened attentively to this paper has gotten all that was said. I want to thank the essayist for presenting it.

DR. G. J. GISLASON (Grand Forks): I want to thank Dr. Lewis for his excellent paper. His plea, if I understand him correctly, is for immediate paracentesis of the membrana tympani in cases of otitic inflammation where suppuration has taken place or is impending. I am sure we all agree on this point. The only trouble is that it is sometimes difficult for the general practitioner to decide with accuracy when that point is reached or, indeed, whether he is dealing with a catarrhal condition that will get well without surgical interference.

In my experience there are two classes of general practitioners as regards their dealing with middle-ear conditions. One class incises every drum where an earache is present, usually the first time he sees it; the other never does. The first evil is preferable to the second, I admit, but it often results in a suppuration where none would otherwise have taken place.

In reference to mastoid inflammation: we must

not forget that there is usually some involvement of the mastoid antrum and neighboring cells in every severe otitis media. The majority of these cases, however, clear up without any other operation than a generous paracentesis, which often must be done even after a spontaneous rupture has taken place in order to secure free drainage.

I want to join Dr. Lewis in urging upon you the great necessity for eternal vigilance in every case of middle-ear and mastoid inflammation. But let us remember that each case is a law unto itself, and no one procedure is indicated in all cases.

DR. W. W. LEWIS (closing the discussion): We have had quite a prevalence of ear conditions in our part of the country as you have had down here. Just why, I do not know, except that we know that most ear trouble comes from air-borne diseases. We have had a very dry spring and there is considerable dirt and dust which invades, primarily, the nose and extends to the ear cavity.

Now, as to the incision: I think every one of us can see without any argument at all that incision through the ear drum does not benefit the ear drum, but the man who makes an incision through the ear drum that may not be necessary is on the safer side than the man who does not make any incision.

I pointed out to you how the accumulation of pus starts in the cistern and rises up and up, and when it does get up into the attic, if you get through without surgery, you are extremely fortunate. Many men argue that a ruptured ear drum takes care of itself. Of course it does, but you run the risk

of the pus getting up into the attic, whereas drainage before it gets to the attic relieves the patient and prevents the latter condition.

As to comparison between incision of the ear drum and rupture of the ear drum: I will leave it to you which does the greater damage to a paper bag filled with air, a perforation with a knife or a breaking by the hand. It is the same thing with the ear drum. An incision with a sharp knife will do less damage to the ear drum than a rupture. A clean surgical incision under proper aseptic technic does very little damage to the ear drum. On the other hand, an ear drum that ruptures spontaneously, instead of having a single opening, has probably a stellate-shaped opening with radiations in a half dozen different directions. Furthermore, that drum does not rupture entirely as a matter of pressure but ruptures secondarily to a necrosis. The drum becomes infected and becomes necrosed as a result of the inflammatory condition. An ear drum that is incised very seldom leaves a perforation. Nearly always, these drums will heal perfectly with a scar that is imperceptible. On the other hand, the drums that are allowed to go on and break themselves are the ear drums which furnish us our permanent defects that trouble the patients half their lives. A child who has a perforation in his drum always stands a chance of mastoid disease when he dives off the spring-board. A patient with a defective ear drum cannot even take a bath in his own home without the danger of getting infection in the middle-ear. Therefore, let me urge upon you the relative harmlessness of early incision in the ear drum in the early days of the infection.

EXTRAPLEURAL THORACOPLASTY*

By ARTHUR A. LAW, M.D.

MINNEAPOLIS, MINNESOTA

A hundred years ago, out of every 100,000 people, 300 died of tuberculosis. To-day the mortality tables show that in country and city districts only 100 out of every 100,000 of population die of this disease, while in some of the more crowded cities the death-rate is as low as forty to sixty.

Hygiene and sanitation, rest and proper feeding, heliotherapy and artificial pneumothorax, the testing of herds and the pasteurization of milk, all are factors which have helped to overcome the high mortality.

Probably the increasing age and longer exposure of the white race to the disease has increased its immunity—a real tuberculization has occurred; the 85 per cent of tuberculous lesions found at autopsy argues for this. Many observers postulate that along with the tuberculization of the race there is a coincident lessening of the virulence of the tubercle bacillus.

Admitting these facts, the death-rate of 100 per 100,000 population is a real menace to society and the expression of our inability to control the disease completely.

Long ago the surgeons dealing with tuberculosis of the bones and joints taught us that perfect immobilization and rest combined with proper hygiene and feeding gave a high percentage of cures in these diseases. We learned that tubercular spines might be cured or arrested by casts and corsets or by the Albee or Hibbs operations, because by these measures they were put at rest. To the consumptive with but one lung involved, artificial pneumothorax holds out hope of cure because here, again, complete immobilization and rest of the collapsed viscus give Nature a chance to cure the disease.

Unfortunately, 20 per cent of the cases of advanced unilateral pulmonary tuberculosis are not amenable to collapse by air or gas introduced into the pleural cavity, cases where repeated attempts have failed because of adhesions between

*Presented before the Western Surgical Association at Wichita, Kansas, December, 1925.

the parietal and the visceral pleuræ which hold the diseased lung out in spite of air introduced under pressure. Two-thirds of these cases with failure of collapse are known to die early, while two-thirds of those successfully collapsed are known to recover. Failing of collapse by this method, these cases then have the hope of recovery held out to them by the operation of paravertebral extrapleural thoracoplasty, the operation of Brauer and Frederick, but perfected and practiced by Sauerbrück.

American surgeons who are usually so keen to accept and practice new and worthy operations have been singularly slow to adopt this procedure. During the last seven years (according to Alexander) but 300 cases have been reported by surgeons in North America. British, French, and Italian surgeons, as well, have been loath to adopt this operation. The world then is indebted to the surgeons of Central Europe for the exploitation and perfection of this valuable procedure, for during the same period of time 1,200 cases have been reported from Germany, Scandinavia, and Switzerland by seventy operators.

The technic of the operation requires no elaboration here, yet certain phases of it are worthy of discussion. We believe the careful, prolonged observation of a patient by the tuberculosis specialist makes him infinitely better qualified to judge which cases are best fitted for surgery than the average surgeon, so close coöperation between both specialists is indicated.

Only those cases of unilateral tuberculosis which show marked fibrosis, an expression of Nature's attempt at healing, are fitted for this operation, never the acute cases. Where fibrosis is advanced, the diaphragm and mediastinum are already markedly retracted and fixed, so after the removal of the ribs there is little further retraction and less danger of cardiac displacement or mediastinal flutter. The operation should be undertaken only when the "well lung" is either healthy or shows healed tuberculosis; if active disease is present the burden of work thrown upon the one lung is certain to aggravate the disease.

We believe the operation invariably should be performed in two stages. The lessened shock and lower mortality argue for this procedure. The interval between the two stages should not be longer than from four to six weeks, because from the periosteum of the ribs resected new ribs are grown which may have a tendency to hold the lung out and thus prevent its collapse; because of this tendency we hold no brief for the graded operation where only one or two ribs are

removed at a time. We believe this procedure should be reserved for the critically ill patient, who cannot stand the more radical procedure.

We do not believe these patients should be given ether; local anesthesia combined with nitrous oxide and oxygen in our hands has proven to be ideal.

Speed in operating is imperative; trained teams only should do this type of surgery.

Removal of segments of all the ribs except the twelfth should be done and the stumps next to the spine should be cut as close to the transverse process as possible to obliterate the costovertebral angle. The region of the intercostal nerves should be injected with absolute alcohol. This militates against the postoperative pain.

Following the operation a snug dressing should be applied with pressure to the collapsed side. This pressure should not embarrass the well-functioning lung, but should be anchored to the opposite hip or shoulder by one of the harnesses which have been devised. This is important, for in a certain percentage of cases before the reformation of new ribs occurs there is a considerable flutter of the lateral thoracic wall.

While the collapse of the lung occurs following the resection of the ribs, the re-formation of new ribs is an important factor in the cure, for as they are formed they permanently immobilize and hold rigid the chest wall in its condition of collapse.

The operation of extrapleural thoracoplasty is a formidable major procedure, rendered more formidable still because it is performed upon a patient already weakened and depleted by the ravages of his disease. Yet in spite of its severity the primary operative mortality is only 1.5 per cent while the secondary mortality of 12 per cent within six weeks from causes indirectly connected with operation is low considering the type of patients presented.

My own series of fifty-four operations done upon thirty different patients show an immediate operative mortality of only one case, the single instance where all the ribs were removed at one sitting; a further loss of five cases in from seventeen days to five months from causes directly attributable to the operation or from the disease itself, all in cases where the first stage only of the operation had been done. This mortality parallels the average death-rate of other operators.

The reverse of the shield is almost unbelievable. Alexander, from his study of cases operated on over the world, found that the apparently cured and clinically cured cases averaged 38.8 per cent and that the improved cases averaged

24.4 per cent, a total of 61.2 per cent cured or improved.

These figures are remarkable when we remember that almost all of these patients were destined

to die of their disease. Surely any operation which offers a return to usefulness of 61.2 per cent of such desperate cases should have the support of the surgeons of the world.

PROCEEDINGS OF THE MINNEAPOLIS CLINICAL CLUB

Meeting of May 27, 1926

The regular monthly meeting of the Minneapolis Clinical Club was held at the Elks Club on Thursday evening, May 27, 1926, at 7 P. M. The meeting was called to order by the President, Dr. R. C. Webb.

The minutes of the April meeting were read and approved.

Drs. S. R. Maxeiner, E. L. Gardner, and J. M. Hayes gave interesting reports on the Dallas meeting of the American Medical Association.

Dr. A. A. Zierold gave a talk on "The Fundamentals of Pleural Drainage."

DISCUSSION

DR. J. M. HAYES: There is nothing in surgery that interests me more than the subject of empyema. Before the recent war, practically every one of the present methods of treatment of this condition had been carried out to some extent in some community, but never before had there been so great a number of cases brought together under the supervision of one organization. The disastrous results obtained from the poorly worked-out therapeutic system used in the early part of the war lead to the establishment of the so-called Empyema Commission. This Commission was made up of several of the leading thoracic surgeons of the United States.

I believe that I am safe in stating that in no medical or surgical condition was there such a therapeutic advancement made as in this one condition. I believe that most of the credit for this advancement should go to this Commission. By their painstaking and thorough work they established a system of treatment which will probably not be improved upon for some time to come.

Never before had there been so violent an epidemic of the "flu." Never had we heard of so much double streptococcic pneumonia. Following these conditions, empyema cases developed in alarming numbers. It was in such cases that we got bad results with the treatment used up to that time. The establishment of this so-called method of drainage which Dr. Zierold has mentioned was perhaps one of the greatest factors in reducing immediate mortality.

I must emphatically disagree with Dr. Zierold in his assertion that Dakin's solution should not be used in irrigating the pleural cavity. On the other hand, I am prepared to back up my statement, not only on my own observations but on the authority of most of the men who were instrumental in reducing the mortality from this condition during and immediately following the Great War. Per-

sonally, I followed one hundred and twenty-five consecutive cases treated in this way during a period of nine months, and not one of these cases had any bad result from Dakin's solution, as suggested by Dr. Zierold. The only cases in which I would hesitate to use it are those in which a bronchial fistula is present. No other solution equals this in dissolving the seropurulent, mucopurulent, or necrotic tissue present in this condition. The method commonly used for treating empyema is as follows: During the very acute stages aspirate with a large syringe and needle. If this brings down the temperature and gives some relief, continue to do this for a short time; usually after three or four days insert a large trocar with cannula at what we consider to be the most dependent portion of the pus pocket. On withdrawing the trocar insert a large catheter through the cannula; this catheter must fit tightly in the cannula; then the cannula is withdrawn, and the tube fits tightly in the wound.

There are many fanciful methods of fastening this tube in position, but usually the simplest is the best. Nothing is more simple than four strips of adhesive tape, two each way, making an air-tight closure about the tube. With close attention to details this can be retained well in position.

The cavity is irrigated every two hours with Dakin's solution. Some blowing exercises seem to aid in pushing out the lung. It is interesting to watch the progress of these cases under the fluoroscope. The size of the cavity usually reduces rapidly until about a two-ounce or three-ounce cavity remains, then it is frequently persistent. At this stage, if the process comes to a standstill, the portion of the ribs overlying the cavity may be resected. This unroofs the cavity, and usually closure results. Irrigations should be carried out under practically air-tight conditions, keeping the tube clamped at all times when the lumen of the tube is not stopped by syringe or other object.

The mercury manometer has been used extensively, and I have had my share of trouble trying to keep one in working order. However, I do not believe it is of much value. We must strive to get all negative pressure possible, and it does not matter much to the patient whether this pressure is definitely recorded or not.

The anatomy and physiology in these cases are very much distorted, and comparisons with the normal chest are not of much value so far as the therapeutics are concerned.

DR. E. D. ANDERSON: There is a great deal of talk about this method being the result of the war, but if you look in the literature you will find the war method was decided upon and approved by many of the pediatricians before the war. Holt showed

definitely that the closed method was quite the choice in infancy.

I cannot agree with Dr. Hayes when he says that, in regard to pneumonia, you can do whatever you want to in the way of treatment, and the child will get well anyway. This may be true in regard to adults, but in children it is certainly essential that one hold them over until the acute stage of the pneumonia is passed, if this is possible.

DR. R. C. WEBB: Thirty-five years ago Dr. Arpad Gester, of New York, wrote a surgical text-book in which he reported twenty-two cases of empyema in children with two deaths, and nine cases in adults with one death, and two cases discharged improved, but not cured. He did his first Estlander operation in 1880. In the acute cases he did not advise resection, but he put his tube in between the ribs. It is of interest that he advised making the incision in the eighth intercostal space a little back of the posterior axillary line.

In September, 1916, when the Carrel-Dakin treatment was first introduced in this country it was my privilege as the surgical interne in charge of these dressings to demonstrate them to Dr. Gerster, who manifested great interest in them, although he had advised the use of chlorine antiseptics in the form of Labarraque's solution in his text-book years before.

It has been said, possibly an exaggeration for the sake of impressiveness, that only those who used Dakin's solution in France during the war really know how to use it or appreciate its value. It is certainly true that when the subject comes up among those who have seen it used properly on a large number of cases at one time that there are many who will support it strongly, and, similarly, that the use of Dakin's solution is often neglected and condemned by surgeons who have not had this experience.

When the Carrel treatment was first introduced in this country it had been proven useful only in wounds of the extremities and similar wounds. My first experience with Dakin's solution in the abdomen was in December, 1916, when I used it in an appendix abscess, and after a short time I found considerable hemorrhage on the dressing. The cause for this hemorrhage can be readily shown in the experimental laboratory by opening an animal's abdomen and filling it with the solution.

At about this same time we treated empyema cases with Dakin's solution, and one of our early cases was a young woman who had had a somewhat neglected case of empyema the previous winter and was being treated for the second recurrence of her trouble. The prompt disappearance of the pus, the healthy appearance of her wound, the decrease in size of her cavity, and the permanent closure of her wound, made an impression on the most critical unbelievers. I have never seen hemorrhage occur from the use of Dakin's solution in the thoracic cavity.

Chutro, of Buenos Aires, at the Lycee Buffon in Paris was, to say the least, dramatic in the manner in which he treated and closed chest wounds during the war. However, the Carrel-Dakin treatment is far from being "fool-proof," and surgical principles must be observed throughout its use.

In this age the *x*-ray should be used to follow the empyema patient in order to discover undrained

pockets of pus which may require a radical thoracotomy to bring about drainage. A catheter between the ribs, with or without closed drainage, will take good care of the case that is promptly diagnosed, providing there is but one pocket of pus. The reason Hippocrates and his successors advocated rib resection was very likely because of the cases which were neglected and those with more than one pocket of pus.

DR. E. L. GARDNER: I just want to mention, in the use of the *x*-ray in this condition, that one must not forget to take lateral views of the chest and localize the cavity.

DR. DONALD MCCARTHY read a paper entitled "The Diabetic Patient from the Viewpoint of Occupation."

DISCUSSION

DR. LAJOIE: This is a very interesting paper and has been very well worked up by Dr. McCarthy. It did seem, after hearing this paper, that these young adults, and especially those who have occupations, might be told that they must change their occupation and that their main occupation would be that of taking care of themselves; other work would be secondary.

I heard of a hospital in Chicago where patients, during the course of their treatment, were taught other work, with the results that their income per month after their illness was almost one-half greater, and sometimes double, what it was before their illness, so that in the course of two or three years they were money ahead.

That plan might be worked out to some extent also in diabetics. With proper training diabetics could be trained to give better service. This might apply especially to those of pre-adult age.

DR. FLOYD GRAVE: Choosing an occupation that diabetic patients can consistently follow is a problem, particularly for young patients. They are usually advised to take exercise, but to do so within limits. They should never become fatigued. Holding a job in manual labor is out of the question. I have seen several young diabetics try it, but all fail, due to lack of endurance.

Responsible positions of any kind where there is nervous strain are equally bad. Nervous strain is always detrimental to diabetics. The old diabetic gets along fairly well at most any kind of work.

The advent of insulin has changed the economic outlook of diabetics very remarkably. Many of the milder diabetics can carry on their own business remarkably well. They get along fairly well with sedentary occupations providing they can drop work before becoming unduly nervous or fatigued.

There is a point about insulin shock that I would like to mention. In introducing treatment with insulin it is advisable to start with small doses and build up to the required amount. A sudden large dose lowers the blood sugar too quickly, and insulin shock results from the sudden change although the blood sugar is not reduced to the theoretical low level of 0.6 to 0.45 per cent, which is said to be necessary to induce shock.

DONALD MCCARTHY, M.D.
Secretary

BOOK NOTICES

HANDBOOK OF DISEASES OF THE RECTUM. By Louis J. Hirschman, M.D., F.A.C.S. Fourth edition, revised and rewritten. The C. V. Mosby Company. St. Louis, 1926.

The fourth edition of Hirschman's work shows a number of additions and improvements over the previous edition. The only criticism which could be offered of this book is the lack of detail in dealing with cancer of the rectum.

The book is primarily intended for the general practitioner, and, as such, the necessity of treatment in detail of the operations for cancer is unnecessary, but the necessity of a thorough rectal examination and the diagnosis of this condition could be stressed more fully.

Everything considered, it is my opinion that this is the best text-book yet published for the general practitioner. It is concise and accurate, and the technic is simple and well described.

—W. A. FANSLER, M.D.

CHEMICAL PATHOLOGY. By Gideon Wells, Ph.D., M.D. Professor of Pathology in the University of Chicago and in Rush Medical College; Director of Medical Research in the Otho S. A. Sprague Memorial Institute, Chicago. Fifth edition. W. B. Saunders Company: Philadelphia and London, 1925.

This volume is a most excellent interpretation of the chemistry of the body during disease. There are sufficient references to normal chemistry to post the uninitiated on the changes which present in pathological conditions. Especially noteworthy are the chapters on enzymes, immunity, inflammatory reactions, vitamins, deficiency diseases, and degenerative diseases. The later works on tumor chemistry, metabolic disturbances, endocrines, and diabetes are very well portrayed.

This volume constitutes a very thorough and elaborate work. It requires much study for a general practitioner to conscientiously review, but the effort is well rewarded by the broader view obtained, not only of our present knowledge on the subjects, but also on the limitations of our knowledge.

—DANIEL H. BESSESEN, M.D.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume VI, Number II (San Francisco Number—April, 1926). 250 pages with 73 illustrations. Per Clinic year (February, 1926, to December, 1926). Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

The author devotes a good portion of his clinics to a treatise on spinal anesthesia. He goes into detail about the technic of the injection and care of the patient under spinal anesthesia. He reports over 20,000 surgical cases done by this method. There is no doubt in the reader's mind but that the author is a past-master in the use of spinal anesthesia, but he also emphasizes the fact that spinal anesthesia is a dangerous weapon in the hands of a novice.

He has numerous other clinics in this number, including a rather unique method of treating aneurysm of the arch of the aorta. His clinic of

disease of the gall-bladder is classical. He especially emphasizes the importance of the study of liver function in dealing with gall-bladder disease. He reports numerous other cases in general surgery, including a case of brain tumor and some plastic surgery.

Clinics of Dr. John G. Clark include symposiums on various fields of gynecological surgery, including treatment of uterine myoma and cancer of the cervix and fundus.

Dr. John H. Jopson gives numerous case reports in general surgery.

Dr. A. Bruss Gill reports orthopedic operations for the treatment of congenital dislocated hip, bone transplants for scoliosis, and cases of spastic paralysis treated by the Stoffel operation.

Drs. J. D. Elliot and Edward J. Klopp, and Drs. Demon S. Pfeiffer and Calvin Smyth report numerous cases covering almost the entire field of general surgery.

Drs. B. A. Thomas, Birdsall, and Harrison have a very fine symposium on surgical diseases of the urinary tract.

The remainder of this number is occupied by symposiums on fractures by Dr. Elison and staff, together with case reports by Dr. L. H. Clerf.

Drs. B. R. Beltran, Schuman, Ivy, and Behrend again cover the field of general surgery.

This volume of clinics is of especial value because it so thoroughly covers the field of general surgery and is free from impractical methods of treatment.

—E. A. REGNER, M.D.

PHYSIOTHERAPY: THEORY AND CLINICAL APPLICATION. By Harry Eaton Stewart, M.D., President-elect American Academy of Physiotherapy; Attending Specialist in Physiotherapy, U. S. Marine Hospitals, N. Y.; Director New Haven School of Physiotherapy. Hoeber: New York. Price \$7.50, 1925.

This book of 335 pages consists of two parts: Part I, in thirteen chapters, presents the elementary physics of galvanism, faradism, ionization, and electrolysis, static and high-frequency currents. The basic physical principles and physiological action of phototherapy, actinotherapy, thermotherapy, hydrotherapy, massage, and exercise are also presented.

Part I, further, gives definitions, indications and contra-indications, and the technic of applications of the above modalities as well as points regarding the care of apparatus.

Part II, in ten chapters, presents the clinical application of physiotherapeutic modalities. The author groups this section in a well-ordered manner under the following headings: "Diseases and Injuries of the Neuromuscular System;" "Bones and Joints;" "Gastro-intestinal System, Cardio-vascular and Respiratory Systems;" "Diseases and Injuries of the Skin;" "Genito-urinary System;" "Postural Defects;" "Foot Disabilities;" and "Miscellaneous Conditions."

The diction is terse and clear, and the book is in easily readable form. The bibliography is fairly complete, and the subject matter is given in a conservative manner. Those interested in the subject will find that it fills a much-needed place at the present time, especially so in view of the fact that the medical profession has been flooded with so much literature that is lacking in adequate scientific basis and experimental background in this very important field of therapy.

—WM. P. SADLER, M.D.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana
The Official Journal of the
North Dakota and South Dakota State Medical Associations
The Hennepin County Medical Society
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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SEPTEMBER 15, 1926

MEDICAL SOCIETY MONTH

September is usually remembered by a few in that it begins to open the medical societies throughout the country. It also means that the staffs of various hospitals will be making their monthly pilgrimage from the office to the hospital in order to acquire a little food to sustain them through the staff meetings. The Hennepin County Medical Society has already begun its September work, and doubtless by the time this editorial reaches its readers we shall be having cards announcing noon meetings and the monthly evening meetings. Various other societies that have just started or recently been born will begin a series of discussions on the subjects to which they belong.

Perhaps it will not be far distant, too, when most of these special meetings will dismember in part its chief organization. It is very delightful, of course, to meet with a few select men of your own specialty or similar interest in medical topics, but it is much better for the community and for the physicians in general to boost and maintain the county medical society whether it is here or there or elsewhere. Most of the summer societies have concluded their meetings with a high degree of success, and now the fall meetings begin with questionable interest.

This is only to suggest that the meetings may be made interesting from the start if the medical

men will turn out and attend as they should and show some interest in the work. It has been said time and again that the meetings of these larger societies are run by cliques. That may or may not be true. It is true, however, that it is necessary for someone to maintain the organizations. Whether they are the right ones may be a question; and, if they are not, the right organizers and their places can be easily supplanted if the members of the association would attend and vote for re-organization. They could accomplish what they wanted. The writer would like to suggest that others would do the work that usually falls upon the few, while the larger number are very apt to be dissatisfied or critical and fail to show their willingness in getting up programs, reading papers, and particularly in attending the meetings. Hennepin County has every reason to feel proud of its work in the past, but it would feel a great deal prouder if the men in the future would be more constant and regular in their attendance.

It has been noted, too, that in most societies a subject which is of common interest attracts the largest attendance. There are very few men interested in a freak topic or the report of a case which occurs once in a hundred years, but the proud possessor of such a case feels it is his bounden duty to record this for future medical reference, and perhaps he is right in his surmises. But the usual man who attends the usual meetings wants something that comes close to him and his work, and it is the man who presents the ordinary, the every-day experience, with an added light, that draws out the crowd. It is strange that we all feel the same, that something that we know something about if presented in a suggestive manner by a man who writes a good paper is much more welcome than the man who is trying to present something unusual or something in which the majority of men have little or no interest. If all the society meetings were to be recorded that are to open this month and next month, it would show up the medical profession as attending the society meetings but not able to attend to their practice.

The district societies which occur in the Dakotas and Montana are beginning their campaign, and doubtless before the month is passed announcements will be published of the various district meetings. They, too, deserve full attention, and every man who can possibly get away from his practice for a day at least should make his presence known; for it is rather discouraging sometimes to attend a meeting where but few are present, although those few and the man who

writes the paper will probably get more attention than if there were many who were indifferent.

Medical men, too, are often slow about reading their medical journals. The editor is obliged to confess that at his back are a number of medical journals that have not been read. They have been looked at perhaps, and scanned, and some of the matter has been gone into carefully. But the men who are interested in local matters in the State journals and our independent representative journal should give these their first attention. Then, too, the majority of them should carefully go over the journal of the medical association particularly when preparing to attend a meeting of the society whether it is the city, district, county, or state. Let us see if we cannot work up a little more interest this coming year than we have for a few years past.

A NARCOTIC LAW IN LOUISIANA

The *Journal of the American Medical Association* of September 11 has an interesting comment in the form of an editorial on "A Narcotic Survey of Louisiana."

The narcotic law in that state is one of the most comprehensive of its kind, extending into the field in a way impossible for federal legislation. Dr. Carleton Simon, of the Louisiana State Board of Health, says, with regard to the law, that even if it is possibly without provision for enforcement by fine and imprisonment, the authority it vests in the State Board of Health to refuse and to revoke registration and certificates and to deny to applicants the official blanks necessary to operate under the law would seem to be sufficient to make it effective.

The comment goes on to say that the fault does not lie with medical men although they believe that some of the law is oppressive and they think that a different sort of co-operation between the medical profession and the State Board of Health would be promoted by repealing the present law. Dr. Simon reports he has talked with hundreds of addicts on the street and in their homes, and on the basis of the information thus obtained he asserts that there are thousands of street addicts buying their narcotics illicitly through the underworld throughout the state. In addition to this, other addicts seem to be able to obtain whatever they need to satisfy their cravings through prescriptions openly given, apparently under authority of the state law. This is probably a statement which could be verified in all other states. Most of the work done by the underworld seller and the narcotic legger is comparatively little, due to the indifferent prescription by the physician.

Dr. Simon sent out a questionnaire to 1,890 physicians and showed that he had reports from 779 and that 51 physicians out of this number during the year 1925 treated 260 non-medical narcotic users. The number using narcotics in this way varied from 1 to 64 for the individual physicians from whom reports were received.

Codeine is consumed in large quantities in Louisiana, but Dr. Simon believes it has no connection with addiction although it is possible that the use of codeine may produce a familiarity with the action of narcotics and thus lead to a desire for a stronger opium derivative. In neurological practice it is often found that codeine or even morphine is of very little use in chronic organic nervous diseases, that its use is largely for those who are depressed, despondent or suffering from the forms of melancholia. It is certainly of no use at all in the active mental disorders, and for that reason, too, it is not very much used in the chronic mental disturbances, and even though it may be used in the early stages it is discontinued very promptly and without any ill effects.

The fact of the matter seems to be that among a million addicts in this country it can probably be conservatively estimated that addiction is found among the people who are mentally or physically deficient, among those who suffer an inferiority complex, and they take the drug because they can get it and they like the mild or stuporous effects of it. These cases, and particularly when the subject is deficient, are very difficult to handle and almost impossible to cure, and yet somehow, somehow, they get most of the narcotics that they want. Consequently, it is on sale by a large number of peddlers whom the authorities seem unable to surround. Once in a while a "plant" is discovered and seized, but this makes but little impression on the narcotic group.

Louisiana seems to be a particularly accessible place for the shippers of narcotics. Now that heroin has been practically eliminated from sale, some drug must take its place and that drug is either opium or morphine or cannabis indica. This drug is handled in Louisiana by a special act, but Dr. Simon does not think the law has been enforced. The drug is imported from Mexico where it is known as "marajuana," but in Louisiana it is sold as "muggles," "moota," and "bombalachi." It is said that thousands of young men and women in Louisiana smoke cigarets of which cannabis is the active base. Cannabis is commonly known as "hashish," and has been in existence for a long time and its use has been variously noted and written about by many of the old-timers. In the North it is probable that

very little of the drug has been in use or in circulation as it does not appeal as does opium or its derivatives.

THE REMOVAL OF DR. A. J. McCANNEL,
SECRETARY OF THE NORTH DA-
KOTA STATE MEDICAL AS-
SOCIATION

The removal of Dr. A. J. McCannel from the State of North Dakota to the State of Washington is a distinct loss to the medical profession of North Dakota and especially to the State Medical Association, of which he was president in 1912 and has been secretary for the past two years.

Dr. McCannel received his early and collegiate education in Canada, but graduated in medicine from the Keokuk (Iowa) Medical College and has practiced in North Dakota since graduation, that is, for over twenty-five years.

Dr. Grassick, in his history of "Medicine in North Dakota," says Dr. McCannel was "one of the dependables," which is high praise, indeed. He was truly a medical-society man, and his value to his profession and to society was manifested in continuous devotion to the interests of medicine and man.

The loss of North Dakota is the gain of Washington.

Dr. John G. Lamont, Superintendent of the North Dakota State Tuberculosis Sanatorium, at San Haven, has been appointed secretary of the State Association until the next annual meeting.

Dr. Lamont is also Canadian born and educated, and he is likewise "one of the dependables." He brings to the office of secretary all of the qualifications that promise success in such work, and we trust he will be able to devote to the work of the Association enough time to do himself justice.

DR. E. J. LEWIS

The record of another one of our old-time doctors is that of the death of Dr. E. J. Lewis who was seventy-eight years old and who practiced medicine for many years in Sauk Center, Minnesota. He was said to be the oldest physician in Stearns County. He had three sons, one of whom was Dr. Claude B. Lewis, a surgeon at St. Cloud; Mr. Sinclair Lewis, a famous writer known all over the reading world; and Mr. Fred Lewis, a miller at Bertha, Minnesota. Mrs. Lewis died several years ago. Dr. Lewis was born at Westville, Connecticut, Sept. 18, 1848, and graduated from Rush in 1877.

As the writer has known Dr. Lewis for some years, he has always been very much impressed with his dignity and aristocratic bearing, and yet he was a genial soul underneath, always cheerful and agreeable and like other typical old-time country doctors. He doubtless knew more than even his literary son could write about. That is, he knew more of the inside of people's lives and of the things that really count in this world. He was rather a quiet, unassuming man and naturally could not have given to the public his private information. It was always a pleasure to meet him when he attended the State Medical Association meetings because he loomed up as a man who was a gentleman, carrying with him all of the marks of dignity and a surety in his professional life. His name will stand for many years as a man of learning and intelligence and as an advisor. He needed no publicity because all he worked for was the service that he rendered in his immediate vicinity. He had not been well perhaps for a year, but he died rather unexpectedly and before two of his sons could reach him.

DR. MILO E. BUSHEY

Another of the old resident pioneer physicians, who practiced in Arlington, Minnesota, died on August 28, 1926. Dr. Bushey was a man who was pretty generally known throughout the state and particularly among medical men, and was looked upon as the old-time family physician. The slogan of his people was that he was "the doctor who never fails to come." The result was that in the early years, in spite of howling snowstorms, long trips by horse and buggy through the wilderness and in the sparsely settled communities, his work earned this name for him.

He was not only a doctor, but he was a man interested in the community and he did more than attend to the sick. Several times he served as mayor of Arlington so that he was interested in the political situation, but it was a community bit of politics which was good for all concerned. He was president of the school board and was always a leader in all community enterprises. He had been for years president of the Farmers and Merchants State Bank so that he has had a rounded out life and was interested in everything pertaining to his town and fulfilled the functions of a medical man, and doubtless was capable of giving good advice not only on occasions but on very many different subjects.

Dr. Bushey was born in Ohio and had lived in Arlington forty-three years. He died there

at the age of seventy-one. The item in the newspaper said he died of some heart disease. Dr. Bushey probably typifies many of the older medical men who were general practitioners as well as father confessors. He probably knew the inside of the life of every one of his patients and was competent to advise them, not only as a friend, but as an associate as well as a doctor. Most of these elderly men know what they need is someone to depend on and knowing, he, too, knew every family's domestic affairs, their business, sorrows, troubles and worries; they went to him for advice and doubtless were cheered or made to think that their troubles were not beyond the point of endurance and they could bear them and cope with them while he stood by with his aid.

We are sorry to have to chronicle the retirement by death of many of the old-time practitioners. They are becoming fewer and fewer, not only in the country but in the city. But it is in the country, apparently, where he is most needed and where he gets closer to the hearts of the people than does the man in the city.

NEWS ITEMS

Dr. J. P. Freeman has moved from Glenville to Albert Lea.

Dr. Alexander Ridgway has moved from Greenwald to Elrosa.

Dr. C. G. Arvidson, of Minneapolis, has returned from a European trip.

Dr. Thomas E. Jones has moved from Sioux Falls, S. D., to Lynchburg, Va.

St. John's Hospital at Rapid City, S. D., will not be open until November 1.

It is reported that Dr. T. A. Lowe, of Gibbon, will move to St. Paul next month.

Dr. I. C. J. Wiig has moved from Wahpeton, N. D., to Fort Lauderdale, Florida.

Another U. S. Veterans' Hospital is to be built at Alexandria at a cost of \$1,400,000.

It is reported that Dr. A. R. Sorenson will move from Rugby, N. D., to Minot, N. D.

The General Hospital at Winona is to be enlarged. The addition will give forty more beds.

Dr. O. W. Yoerg, of Minneapolis, accompanied by his wife, has gone to Europe for four months.

Dr. L. G. Rigler, of Minneapolis, has gone to

Europe for a year's study in x -ray and radium work.

Dr. George A. Holm, of Minneapolis, was married last week to Miss Gerda Anderson, also of Minneapolis.

The Winona General Hospital building is to be enlarged by an addition of three stories, which will cost \$100,000.

The U. S. Government has loaned the University of Minnesota radium, valued at \$100,000, for use in experimental work.

Dr. C. N. Hensel, of St. Paul, has returned from Europe, where he has been doing research work for the past five months.

The annual meeting of the Southern Minnesota Medical Association will be held at Mankato on October 18 (a one-day session).

Dr. Edwin J. Lewis, of Sauk Center, died last month at the age of 78. Further notice concerning Dr. Lewis appears in our editorial columns.

Dr. Milo E. Bushey, of Arlington, died last month at the age of 71. Further notice of Dr. Bushey's life and work appears in our editorial columns.

Dr. Jacob Fjelde, in charge of the obstetrical work of the Dakota Clinic of Fargo, N. D., has returned from Chicago where he has been doing postgraduate work.

Dr. Hamline Mattson, a 1925 graduate of the Medical School of the University of Minnesota, has opened offices in the Physicians and Surgeons Building in Minneapolis.

The Cass County (N. D.) Medical Society has a new lantern for the use of its members and others who present subjects requiring lantern-slide illustrations at its meetings.

Dr. James H. Redd, of Minneapolis, died last month at the age of 42. Dr. Redd was a graduate of Northwestern, class of '08, and had practiced in Minneapolis for eighteen years.

Dr. Arnold Hansen, of Minneapolis, a recent graduate of the Medical School of the University of Minnesota, was married last month to Miss Margaret Day, also of Minneapolis.

Dr. James J. Barfield, Superintendent of the Riverside Sanatorium at Granite Falls, has resigned to become associated with the Cragmor Sanatorium at Colorado Springs, Colorado.

Drs. J. S. Beagle and H. H. Parsons, of Sidney, Mont., are soon to move to California. The

trustees of Sidney Hospital passed highly complimentary notice of their work in the hospital.

Dr. John N. Risjord, of Fertile, died last month at the age of 66. Dr. Risjord was a graduate of the Keokuk Medical College, class of '98, and had practiced at Fertile for twenty-seven years.

Dr. J. E. Mannion, who has conducted the Platte Hospital at Platte, S. D., for the past year, has enlarged the hospital by purchasing and remodeling a large residence for hospital purposes.

Camp Release District Medical Society held a meeting last week at which clinics were given by Dr. J. T. Christenson, of St. Paul, and by Drs. G. E. Brown and G. T. Eusterman, of the Mayo Clinic.

Dr. Lewis M. Daniel, of Minneapolis, was married last month to Miss Hannah N. Mallon, of Cincinnati, Ohio. Dr. Daniel is a 1923 graduate of the Medical School of the University of Minnesota.

Dr. A. J. McCannel, of Minot, N. D., Secretary of the North Dakota State Medical Association for the past two years, has moved to Silverton, Oregon. Further notice of change appears in our editorial column.

That the Catholic Sisters will establish a hospital in Aberdeen is now certain for they have rented a large rooming-house and two smaller houses and are putting in a heating plant to make temporary quarters for the hospital.

The Western Surgical Association will hold its 1926 annual meeting in Duluth, on October 14-16. Dr. Harry P. Ritchie, of St. Paul, is the Secretary of the Association, and Dr. Robert C. Coffey, of Portland, Oregon, is the President.

Dr. W. A. Stern, of Sioux Falls, S. D., who is taking a postgraduate course in Vienna, has written an informing and interesting letter to the Exchange Club of Sioux Falls, which was published in the *Argus-Leader* of that city.

Dr. Ross M. Gamble, of Ellendale, has joined his brothers, Drs. J. W. and Paul M. Gamble at Albert Lea, and formed the Gamble Clinic. The three brothers are graduates of the Medical School of the University of Minnesota.

Dr. James B. Ferguson, retired and living with his son, Dr. J. C. Ferguson, of St. Paul, died last month at the age of 86. Dr. Ferguson was a veteran of the Civil and Spanish-American Wars. He formerly practiced at Olivia.

Dr. Fred F. Attix, of Lewiston, Mont., president of the Montana State Medical Association, celebrated the twenty-fifth anniversary of his practice in Lewiston by giving a banquet to the physicians of Fergus County Medical Association.

Dr. Kristian A. Wadel, of Fargo, N. D., died on Sept. 3d at the age of 62. Dr. Wadel was a graduate of Bellevue, class of '98, and had practiced at Northwood and Portland, N. D., before locating at Fargo, where he was a member of the Fargo Clinic at the time of his death.

President Coffman of the University of Minnesota has notified the State Medical Association that, in his opinion, it is necessary to receive pay-patients at the University Hospital and that full-time teachers in the Medical School be permitted to have private patients in the Hospital. A long controversy will follow.

Dr. Huldah E. Thelander, a Minneapolis woman and a graduate from the Medical School of the University of Minnesota, in 1924, with the highest honors of her class, who has spent two years in the San Francisco Hospital for Children and a year in a well-known children's clinic of that city, is going to China as a medical missionary.

The Black Hills (S. D.) Medical Society held a meeting at Spearfish on August 31. A fish dinner was served in the park, and after dinner the following program was given: "The State Tuberculosis Sanatorium," by Dr. R. E. Woodworth, of Senator; "Some Interesting Fracture Cases," by Dr. F. S. Howe, Deadwood.

Dr. Samuel C. Lind, the new Professor of Chemistry in the University of Minnesota, who comes from Washington where he was engaged in research work, is a pioneer in the development of radium. He studied in the laboratory of Mme. Curie and in Vienna. He will have much to do with the radium work in the Cancer Institute of the University.

The Huron District Medical Society of South Dakota held its first meeting of the autumn at the Marvin Hughitt Hotel in Huron on Sept. 9. After dinner a case report on "Malta Fever of Bovine Origin" was made by Dr. D. A. Gregory, of Miller. A talk, with illustrations by lantern slides and pathological specimens, on "Urological Diagnosis" was given by Dr. F. J. Tobin, of Mitchell.

The October meeting of the Minneapolis Surgical Society will be held in the Hennepin Coun-

ty Medical Society's rooms, Donaldson Bldg., Minneapolis, on Wednesday, October 13, 1926, at 8:00 P. M. The address, "The Surgical Treatment of Cancer of the Rectum," will be delivered by Dr. Robert C. Coffey, of Portland, Oregon. All members of the profession are cordially invited.

On Sunday, August 29, the citizens of Bertha and surrounding towns of Todd County, gave a picnic to pay their respects to Dr. W. W. Will, who has practiced twenty years in that village. A very large throng of people gathered in the picnic grounds, and highly complimentary remarks were made by the mayor and other citizens in appreciation of Dr. Will, the man and the physician; and a handsome gold watch was presented to Dr. Will.

Dr. Julius Jensen, of Minneapolis, who contributed an elaborate article on diabetes to the JOURNAL-LANCET (April 1 and 15), has accepted a Teaching Fellowship in the Medical School of the University. His work will be along medical lines in the wards of the General Hospital in addition to research work with Dr. Berglund in the Department of Medicine in the University. Dr. Jensen came from London some months ago to establish himself in this country.

Upon invitation from the Upper Des Moines Medical Society of Iowa, the Sioux Valley Medical Association, which was scheduled to meet at Sioux Falls, S. D., in August, gave up its mid-summer meeting and became the guests of the Iowa Society, on August 17 and 18. The program of the latter society was an elaborate one, and the attendance was over two hundred. The Sioux Valley Association held a business meeting for the election of officers, with results as follows: President, Dr. Wm. Jepson, Sioux City, Iowa; first vice-president, Dr. C. C. Tellesen, Wynot, Neb.; second vice-president, Dr. W. H. Dewey, Mowville, Iowa; secretary, Dr. R. F. Bellaire, Sioux City, Iowa; treasurer, Dr. W. R. Brock, Sheldon, Iowa; censor, Dr. Gerrit Maris, Hull, Iowa.

MISCELLANY

SAFEGUARDING THE PUBLIC

Being sick is no trivial matter. People are beginning to realize more and more that an ache in the side or a pain in the chest are not to be laughed off. They know now that such things are often indicative of a serious physical condition.

Formerly they said: "Oh, I'll be all right in a day or so. It'll wear off." Now they want to know

what it's all about. And does the intelligent person go to a quack, a witch doctor or a faith healer at such a time? He does not. He wants to get the best medical advice possible. A correct diagnosis by a competent physician may be a matter of life or death.

But how is he always to know when he is consulting a real doctor? There are capable, trustworthy physicians in every community. But there are also fakers and incompetents. The laxity of our laws permits this. The situation has become so serious in New York state that a determined effort is being made to remedy the Medical Practice Act so as to protect the public against unscrupulous men, often with doctors' degrees, who widely advertise their false claims with no thought for the welfare of the sick but for financial gain only.

A hearing recently was held on a new bill which not only provides for registration of all duly licensed practitioners but requires annual re-registration, to be kept by the board of regents and to be available to medical and health agencies in every county. This will allow a check up on all physicians in the state every year and those deemed unworthy will not be re-registered.

To make the penal provisions of the bill more effective, it transfers the prosecuting duty from the county district attorneys to the attorney general and places such cases in the Courts of Special Sessions.

Another safeguard is the establishment of a Grievance Committee which is charged with the duty of sifting evidence as to unprofessional and illegal practices on the part of licensed physicians and of submitting recommendations to the Board of Regents as to the revocation of such licenses. The Grievance Committee is to be appointed by the Board of Regents, in part, after suggestions from the State Medical Societies.

The next Minnesota legislature will do well to consider this bill. Such an act is needed in this state where the abuses of quacks and unethical licensed practitioners are becoming more flagrant. The re-registration and other features of the bill would go a long way toward correcting this evil.

—Northwestern Health Journal.

Position Wanted

By an experienced physiotherapy technician in a physician's office. Best of references. Address 204, care of this office.

Practice in Minneapolis for Sale

Practice and office fixtures and furniture in an excellent location in Minneapolis, on the south side, are offered for \$350. Address 198, care of this office.

Down-town Physician's Office for Rent

Will rent office space part time (8 A. M. to 2 P. M. and evening hours) or will sublet whole office. Dentist in same suite. Address 203, care of this office.

Wanted to Rent in Minneapolis

Private office, use of reception room and phone, with doctor or dentist, in good down-town office building; rent must be reasonable. Address 194, care of this office.

Locum Tenens Wanted

For six months beginning at any time now. Any-one interested may write for information. Good income and collections. Address 209, care of this office.

Physician Wanted as Associate or Substitute

Fine location in a country-seat town on a lake in Northern Wisconsin. Population, 4,000. Good schools, churches, etc. Address 211, care of this office.

Good Opportunity

To join a small group in a community of 40,000. Specialty: obstetrics; children's diseases; eye, ear, nose, and throat work; or internal diseases. Address 208, care of this office.

Office Position Wanted

By a competent young woman of some experience and best of references. A good stenographer. Will render faithful service and begin on \$12 a week. Address 210, care of this office.

Office to Rent

An opportunity is offered to wide awake progressive young physician to share with surgeon and dentist office suite in central down-town section of Minneapolis, first floor location. Every co-operation will be extended. Attractive terms. Atlantic 0137.

Apparatus for Sale

One Fischer Portable Diathermy Walnut Cabinet with accessories, and one Victor Bedside X-Ray Unit, 30 milliamperes capacity with Coolidge tube. Reasonable terms. Address 192, care of this office.

Physician Wanted in North Dakota

Fine location in western North Dakota for robust young doctor, who will be appointed County Health Official at salary. Practice should range from \$3,000 to \$6,000. Address 196, care of this office.

Practice for Sale

In western Minnesota town of 2,000 population, general practice with physiotherapy equipment. Income around \$1,000 per month. Practice sold at inventory price. Introduction. Address 201, care of this office.

Young Physician Wanted

To take over an old-established practice. City of 7,500 population in lake region of northern Minnesota. Office complete in every respect. No real estate. Reason for leaving, ill health. Address 193, care of this office.

New Connection Desired

A 1923 graduate of a first-class medical school desires to become associated with a high-class man (or clinic) whose major practice is surgery and has hospital connections. Best of references as to attainments, character, and personality furnished. Licensed in Minnesota. Address 186, care of this office.

Practice for Sale

A very lucrative unopposed general and surgical practice in a live modern town of 600 in eastern South Dakota. Mixed population. Excellent

schools, good roads, good territory, no crop failures, well settled. This is an opportunity to make money from the start. Terms to suit purchaser. No real estate. Address 189, care of this office.

Young Physician Wanted

To locate in a South Dakota town of 600, with large surrounding territory. Nearest town with doctor nineteen miles. Young druggist will furnish new two-room office (with seven windows) and heat and light free of charge. Old doctor will retire on account of poor health. Address 205, care of this office.

Physician Wanted

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THE DOCTOR AND THE PERSONAL INJURY CLAIMANT*

By ARTHUR SWEENEY, M.D.

ST. PAUL, MINNESOTA

Doctors are a credulous lot. They have the habit of believing all that their patients tell them. Ordinarily when a patient complains of headache, or nausea, or pain in the small of the back, the doctor has no reason to doubt the truthfulness of the complaint, because there is no other apparent motive than the desire for relief. But when one comes who has been the victim of an accident and who has a claim for compensation, another element enters the case which the doctor is frequently unable to recognize. He, therefore, receives in full credence statements which are self-serving and may not be genuine. The complaints of a hobo are received by the doctor with the same faith as the statements of an ordinary patient. He does not realize that behind claims for compensation may lurk dishonesty, exaggeration, resentment, and other unworthy emotions.

Objective symptoms cannot well be exaggerated. If a person has lost a limb, has a cut on his head, or a broken bone, the doctor by his physical senses can determine the nature and consequences to a fairly accurate extent. Subjective symptoms, however, are in a different field. For them we must rely on the veracity of the patient. Where there is an ulterior motive the complaints fall under suspicion. All of us when injured, if a liability attaches to the accident, however sure we may be of our integrity, might be liable to slip a mite in detailing our symptoms. It is

not likely that we would let them be diminished by lack of description. In fact we would probably err a trifle on the side of exaggeration and unconsciously emphasize our complaints. How much more would this be the case with those who are actually dishonest and whose interest in the injury is mostly financial?

It is a rule that the greater the physical damage in an accident the less the neurosis. On the other hand, the smaller the bodily damage, the greater will the neurotic element predominate. One who has had legs crushed suffers from shock, loss of blood, and other conditions which do not arouse a large degree of emotional disturbance. The attention of the patient is limited to the fight against the physical dangers which threaten. The suprarenals pour out their secretion to fortify the system, nature pours out phagocytes to fight infection, and the whole body and mind are concentrated upon the struggle to get well. Here is no place for the emotions.

When the injury is slight the patient is awake to the surrounding conditions of the accident. He has witnessed the sufferings and heard the cries of others, has imbibed the horror of the accident, and is full of fright and apprehension. The narration of the details of the accident to his friends, his self-congratulation on his escape, the realization of the imminence of his danger are all factors in the upbuilding of a neurosis. There is no doubt that the mind has a large effect on the body, and certain semi-objective symptoms may be present as a result of the mental state. There may be cyanosis of the hands, sweating, dilata-

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tion of pupils, rapid pulse, paralysis in various degrees, or marked sensory disturbances.

The essential feature of the subjective signs of litigation cases is their extreme character. Headache is always extreme, constant, terrible. Pain in the back is also severe, continuous, and unendurable. The numbness, nausea, and other symptoms are of the extravagant type and are described with adjectives of the superlative kind. The account of symptoms is accompanied by wincing on pressure on the spine, by outcries of extreme pain on manipulating the lumbar region. A light touch produces as loud an outcry as a hard one. Incoördination shows itself by backward falling with the eyes shut, and the patient makes a poor attempt to apply his finger to his nose. Paralysis is seldom partial, as is often the case in organic disease, but is usually of the complete type. Sensory loss is usually extreme, both to touch and pain, and is of the characteristic circular type. In all complaints there is exaggeration. When one falls down his own cellar stairs one usually swears, rubs the posterior part of his anatomy, and goes back to work. When he falls down some one else's cellar stairs, if there is an attached liability, he develops a so-called "traumatic neurosis," traumatic only in the sense that an accident preceded it, and a neurosis only in that there is a disturbed emotional state from which ulterior desires cannot be separated.

How are we to distinguish the real from the unreal? In the face of a multiplicity of complaints of severe suffering how are we to distinguish the truth? The problem is a little difficult, but not impossible. Always keeping in mind the unconscious tendency to exaggeration in the most honest of us, and the conscious determination of the dishonest to make the most of his symptoms, there are certain facts that show the difference between real and assumed disease. Careful consideration of the motor and sensory conditions will usually reveal the truth.

In organic disease paralysis has definite characteristics. In hemiplegia the paralysis is one-sided, limited to face, arm, and leg. It is complete or partial at first. If complete, there is first an abolition of reflexes and then an exaggerated response after a few days. Ankle clonus may be present. The Babinski sign is almost constantly present. There is late contraction of muscles of the arm and hand, and the leg shows contracture of the flexors with characteristic sickle gait. There is usually definite atrophy other than that which arises from disuse. Pain is absent, except when there is a passive arthritis of the shoulder joint, from the separation of the head of the

humerus from the glenoid cavity due to the relaxation and weight of the dependent arm.

In hysterical or feigned paralysis the picture is different. The paralysis is practically always of the flaccid type. It is complete from the start. It does not improve as does organic hemiplegia. There is no alteration of reflexes. Babinski's sign and ankle clonus are not present. There is no atrophy nor contracture. There is pain, usually severe at some points. The sickle gait is absent, but the patient drags his leg flail-like behind him. There is an apparent relaxation of the intimate muscles of the hip joint which makes the leg appear longer than its fellow, and it is dragged with the toe on the ground or the side of the foot scraping the sidewalk. There is no throwing of the foot as in infantile paralysis or tabes, but the gait is characteristic of malingering or hysteria. It in no way resembles organic paralysis.

Where total flaccid paralysis exists a simple test will reveal its nature. Have the patient lie on a hard surface, place your hands under his heels, and ask him to raise the sound leg as high in the air as he can. If the paralysis is feigned he will make pressure on your palm with the heel of the paralyzed leg. Ask him then to try to raise the paralyzed leg, but he will make no effort and there will be no pressure on the hand that is under the heel of the sound leg. This reveals the fraudulent nature of the paralysis. Normally, when one lying on his back wishes to raise one of his legs, he makes counter pressure on the floor with the other one, using it as a sort of fulcrum or point for inaugurating the effort. The faker does not realize this, and in raising the sound leg he unconsciously makes pressure with the paralyzed one.

In partial paralysis of organic nature, the paralysis follows the anatomical arrangement of nerve and brain cell. The person who claims that his hand is paralyzed will make slight or no effort to squeeze your fingers, but while he is doing so you will be able to feel and see that the muscles of the forearm are strongly contracted. The flexors of the wrist will be held rigidly, although there is no contraction of the flexors of the fingers. Likewise you will find that the supinators and pronators are strong, while the flexors of the fingers are practically helpless. Use of the manometer also betrays the pretended paralysis. Ask the patient to exert all his strength in squeezing the instrument. He may register five or ten where the normal is fifty. In a few minutes repeat the test, and he will be apt to register fifteen or twenty-five. Repeated

tests, after intervals in which he has forgotten how hard he squeezed at the former trial, will produce such variable results that there can be no doubt of the pretended nature of his paralysis.

The sensory field offers the greatest opportunity of detecting fraud. The nerves conveying sensations are usually mixed nerves and run according to well-known anatomical distribution. In the extremities the outline of organic sensation is rather conical in form, running from an acute angle above and broadening as it descends. Each nerve has its own area well defined and accurate. Its distribution is never horizontal, but always perpendicular. In malingering, however, the reverse is true. The upper margin of anesthesia is practically horizontal. In his leg the loss of sensation is stocking shaped, terminating above in a circular line; in all the areas below both cotton and pin prick are not felt. With a grease crayon mark on the leg the upper limit of anesthesia as you obtain it by examining from below upward. Then proceed with some other part of the examination for a few minutes and return to the sensory test, using the pin and cotton from above downward. The malingerer has forgotten his former limit of anesthesia, and you will establish a new line two to four inches below the first one. Repeated tests at intervals will create new limits of sensation at will. You can establish beyond doubt not only that the anesthetic areas do not correspond with the anatomical distribution of the nerves, but also by the wide variation of the areas of sensory loss that the patient is not telling the truth in his answers to your test.

In some cases there are apparent paralysis of motion and complete loss of sensation in both legs up to the groin or to the umbilicus. In these cases the sensory loss resembles that found in transverse myelitis. The patient has rather definite landmarks by which he can obtain reasonable accuracy in his replies to the sensory tests. If the patient is in a hospital give him thirty grains of trional or sulphonal at bed-time; and, toward midnight, when he is sound asleep, gently raise the bed-clothes and tickle his feet. Unconsciously and instinctively he will draw up the paralyzed legs, wiggle his toes, and demonstrate conclusively that he has lost neither motion nor sensation.

In organic paralysis from transverse myelitis there is usually, at one period or another, interference with the sphincters of the bowel or bladder. The patient will complain that his urine dribbles, that he wets the bed or his clothing. Examine the parts to see if there is excoriation and examine the clothing for moisture or urinary

odor. In complaint of retention or inability to pass urine, when the bladder is full, pass a catheter only beyond the triangular ligament to the base of the prostate, but not into the bladder, and urine will begin to flow, often with such force as to expel the catheter with violence. This, of course, demonstrates the integrity of the nerves controlling the sphincters. In transverse myelitis there are always atrophy and an impaired nutrition of the skin, often leading to bed-sores. In the absence of atrophy, loss of reflexes, urinary incontinence, and bed-sores it is relatively safe to assume that the condition is functional and not organic.

Tenderness of the spine is always a suspicious symptom. Only in disease of the bones is there tenderness over the spinal processes. In wrenches and strains of muscles and ligaments there is tenderness on pressure at a distance from the midline of the back, but not in the bones themselves. By pressure on the spines one can mark the tender points. Repeating the examination after a short interval causes wide variation in the location of these markings, revealing that spots that were previously sore are now sound, and spots that were formerly free from pain are now painful. Where there is a general tenderness of the spines of the vertebræ from the cervical region to the sacrum it is always safe to make a diagnosis of neurosis rather than organic disease.

Generally speaking, the subjective symptoms of claimants differ from those of ordinary patients by reflecting the heightened imagination of the hysterical ones or the purposive exaggerations of the fraudulent. Their statements are always in superlative terms, the symptoms are bizarre, not corresponding with anatomical or physiological facts. Their complaints are variable, and there is no constancy as to their nature or their anatomical distribution. Exaggeration and pretense are hard to distinguish one from the other, for the hysterical person unconsciously exaggerates existing facts, while the pretender assumes facts which are inconsistent with diseased status. The hysterical patient reveals himself by a symptom complex which is fairly definite, but the fraudulent claimant shows inconsistencies which rule him out from the hysterical or functional class.

To conclude, it is important that doctors on examination of claimants free themselves from that complacent trustfulness which gives credence to subjective conditions and that they view with suspicion subjective complaints which may have their origin in a desire for gain.

DISCUSSION

DR. E. A. PRAY (Valley City): This splendid exposition by Dr. Sweeney brings to the minds of all of us one or more cases wherein some such malingering was worked upon us. I remember one case early in my practice where the claimant was injured in a car on the Northern Pacific Railroad that was being switched. He claimed extreme injuries. I wired the officials that a small sum would settle the case. The settlement was made, and three days later he was about town having an awfully good time.

We find with the compensation law which we have in our state that these people stay sick longer towards winter than in the spring when it is nicer to get out. I think if compensation boards will look that up they will find that illness lasts longer in winter than in the spring. Our Medical Defense Committee has a case on now in which a man sustained a fracture but made a good recovery, although function was not quite perfect. Because of the influence of the second physician and the remarks he made a case of malpractice was put on. Right here it gives me an opportunity to say what I want to say regarding this defense proposition, that we have got to learn to keep our mouths shut or to use some sense about the remarks we make about cases that come to us from other men. Of twenty-one cases on hand at least fifteen of them were due to trouble caused by remarks of other physicians. That is the state of affairs as it exists in our state and as I suppose it exists in other states. We must learn to keep our mouths shut when examining work from other men. The situation here is such that the Aetna Insurance Company which defends us is throwing up their hands, and the result is that they are going to increase their rate. The eastern part of the state they are willing to insure at the present rate, for the middle part they want \$85.00, and the western part they will not insure for less than \$150.00 per member. That is because of the large number of malpractice suits being brought in the western part of the state. In the western part it is \$21,000, and consequently the amount of income is not sufficient to enable them to carry on at the present rate. I state this because I want you all to know. It is up to the Medical Defense Committee to decide what to do.

When I was a hospital interne we had a chief who was a mighty good judge of human nature. We had a lot of malingerers who would come in in the fall and want to stay all winter. After they had been there a few days the chief would come in and order for them an electric brush treatment. They would be well the next day and want to move on. That is one way of handling them. Dr. Sweeney's scientific way is much better, but the electric brush got there.

I want to thank Dr. Sweeney for the splendid paper he has given us and I want him to realize that what he gave us this time is going to be of much benefit. We all get these cases at some time, and therefore it is going to be of great value to us.

DR. W. A. JONES (Minneapolis, Minn.): I think that Dr. Sweeney had a little smile lurking behind his forebrain when he read his paper, because no one knows better than he how many of the patients that are seen for litigation testimony are really of an inferior grade. In many instances they are sharp

and shrewd, and they take every advantage to put this part of themselves over on the doctor. And I am quite free to admit that we as doctors, as a class, are very poor examiners at times; that is, we slight our opportunities and slide over many of the patient's symptoms without a careful investigation.

I, too, have seen a good many of these people and have frequently testified in court, and in the course of my experience I have had a vast amount of amusement. But as the work of the expert who testified grew less and less in value, and as I had in the meantime acquired a sufficient amount of experience, knowledge, and, perhaps, some wisdom, I resigned from the witness stand because of the chaotic condition of the experts' testimony. To illustrate some of the conditions we meet, I recall that four doctors, two for the railroad and two for the patient, were sent out in the country to examine a man who had a hemianesthesia. He claimed that he had no sensation on one side of his body and that this condition was due to his accident. The lawyers for the railroad company and for the plaintiff agreed that four men should be appointed to examine the man and report their findings, and they promised to accept the report if we all signed the document. We went on this pleasant excursion and saw the patient. It was quite evident the man had no paralysis of any kind, that his hemianesthesia was extremely doubtful. After we had looked him over sufficiently and discussed the case, three of us agreed that it was a case of malingering. The fourth man disagreed, and he made the astounding declaration that when a man is once hurt in his nervous system he never recovers. All arguments failed to move him in his opinion, although he probably knew, as did the rest of us, that many people recover from functional or organic nervous disorders caused either by accident or by illness. Because the four of us could not agree, the railroad company grew uneasy and paid the man six thousand dollars. The following day, after receipt of his check, his home doctor came in to see him and was told to get out of there, that he was all right and was going out to buy a farm!

I have in mind an instance where a young man was brought into the office who had been injured in a street car accident, at least so he said, and his principal complaint was that he had an anesthetic area on the back. After getting his history and the lack of other complaints, I made a very hasty examination, but I got on the wrong side; I examined his well side, while he thought I was examining his sick side, and he became so confused in knowing which side was anesthetic that his case fell to the ground.

Another man was an albino with the usual white hair, pink eyes, partial deafness, and other symptoms that are characteristic of the albino. He had been in the side-shows for so many years that he had acquired a lot of shrewdness; he knew human nature pretty well. This man said that he was riding into Minot, and the train suddenly jerked; that his head was thrown forward, and his neck was jarred. From this time on he developed all kinds of symptoms, but noticeably a distinct loss of power and a loss of sensation and all other symptoms that go to make up a beautiful picture for a railroad-accident litigation. He, too, had a claim that one side of his body was anesthetic. And again in my eagerness to test his anesthesia I stuck him with a pin on

the anesthetic side before he was quite ready for the examination. He flinched, and gave the whole case away then and there. His attorney knew nothing at all about the man, and apparently was not prepared when he came to trial. He had evidently never heard of albinos or what their physical peculiarities are. The result was that when called upon to testify I had to assert that the man had no loss of sensation, that it was assumed; but the lawyer did not understand it that way because the man himself had told him he had a disturbance of sensation. And when I told him, too, that he was not deaf in his so-called deaf ear, the attorney could not appreciate it, and he said, "How did you test him?" I answered, "by blocking up his good ear and talking to him in the ordinary tone of voice, and he heard everything I said and answered my inquiries." Then the attorney became rather insistent and asked that I demonstrate on him. I blocked up one of his ears and talked to him, and he did not hear anything I said. He finally said, "Why, Doctor, I did not hear you." And when I replied that it was because he was deaf in his own ear, and his client was not deaf, he dropped that part of his cross-examination. The railroad company won that case after a number of days. And in order to make some inroads upon the fraudulence of the matter they had this man followed up into Canada, and they confiscated enough of his property to pay costs and made him pay ten thousand dollars for the expenses of the trial. This, I believe, is the proper way to treat these malingerers, these men who are deliberately trying to get damages for claimed injuries, but who are not suffering from injuries. I think in some of these instances, many of them, I am sure, the patient should be very carefully examined, and relying upon the statements that are made by both sides, the physician ought to arrive at a reasonable conclusion as to the existence or non-existence of effects from injury. But until that time comes many cases that are fraudulent will be brought into the courts. Some persons who are really injured and who get into the hands of contingent-fee attorneys will not get what they deserve; on the other hand, when large verdicts are given for people who are defended by shrewd men of the law, excessive damages will be awarded.

This condition can be mitigated only by a new and tried method. In New York and in other states, in Chicago and Minneapolis, a commission of physicians has been appointed by the court to examine the injured man and to make their findings known to the court, and in this way the unbiased opinion of the medical experts gets before the jury, —for no man can go on the stand without a certain amount of bias. The Professional Men's Club of Minneapolis is composed of lawyers, doctors, engineers, artists, and other allied professions. They have taken up the question of expert testimony, and they are to appoint a member from each of the professions to get together as a committee and outline some plan to do away with this unfortunate expert-testimony farce. The doctors were first approached, and the matter was brought to the attention of the Hennepin County Medical Society, which, as you know, is the largest society between Chicago and the Western Coast. They confirmed the findings of the self-appointed committee, and it was discussed by the doctors, lawyers, and men of other professions. The legal men were to take it up at

their annual meeting in July and discuss it. Apparently they are all willing to enter into some plan that will simplify expert testimony. It was suggested, too, that the president of each local society of all the professions should choose from his group of men a list of those who are qualified to testify. Under the circumstances the president of an organization of this kind cannot go too far wrong to be criticized because he will consult with his confreres before he sends to the judge or the court a list of men that are, in his judgment and in the judgment of his associates, honest, conscientious, and able men.

The question arose as to who should call the expert. Should he be called by the judge before the question of trial came up? Should the committee of experts appointed by the court meet and make their examination and their report before the case came to trial? How should they be paid, by the State or by the County? And the discussion so far leans toward the hiring of the expert by the State or at least through some such channels as might be provided by law. Of course, the lawyers on the whole might not accept this suggestion because some of them feel that they ought to be permitted to call their own experts, and doubtless the courts will examine this and make it permissible. But the appointment of a commission by the court would certainly have much more weight with the jury than the experts who testified thereafter. There should be no politics in this, no favoritism. Very naturally it will take some time to work out a satisfactory program. I hope the North Dakota State Medical Association will consider this matter and help other States in arriving at something that will simplify the testimony of the medical expert.

DR. W. H. BODENSTAB (Bismarck): I was very much interested in Dr. Sweeney's paper and also in the remarks of Dr. Jones, because I have learned a great deal about the subject under discussion during my connection with the Workmen's Compensation Bureau in the last two years. Back injuries, the so-called "back sprains," are the bane of the medical man and of the Compensation Bureau, and, I believe, they head the list of injuries and are more numerous than any other specific injury with which we have to deal.

The farmer and the day-laborer, who are not covered by the compensation act, scarcely miss a day of work after an injury to the back, whereas the employee of a person who carries compensation insurance will often lay off for weeks or months, drawing disability benefit, although the most careful examination does not reveal any lesion to account for the disability. Many of these patients consult members of some "cult" who report "subluxation" and accompany this report with a fee bill for from twenty to forty adjustments. I have no hesitancy in stating that this practice encourages faking and malingering.

Dr. Sweeney and Dr. Jones discussed the subject from the viewpoint of the neurologist, and cited a number of cases in which the patients turned out to be malingerers. In order to prevent, however, the innocent from suffering with the guilty I would like to say a few words in defense of the claimants, because it frequently happens that an injured employee is discharged by the attending physician and reported as a malingerer when a careful examina-

tion reveals a serious lesion. I want to caution against a too hasty diagnosis of malingering, and rather to consider every supposed injury a true injury until careful observation has proven otherwise.

Only, recently a young man came under my care following an alleged injury to his back, the result of heavy lifting. He gave a history of a sudden sharp pain in his back, coming on while lifting on an automobile. The attending physician treated him for several weeks for a sprain, but as there seemed no improvement he referred him to me. The claimant had a definite scoliosis in the lumbar region. The x-ray showed a definite separation of the right sacro-iliac joint, and the spine was apparently normal. After three weeks hospitalization the claimant felt better, but refused to acknowledge that he could go back to work. Another x-ray taken before his discharge revealed a fracture of one of the facets of the 2d lumbar vertebra, which I had overlooked and which undoubtedly was the cause of his disability. I could cite a number of similar cases which came to my attention in my compensation work, and for that reason I ask that one should use the utmost care before pronouncing

a verdict which may do a great injustice to both the claimant and his family.

DR. SWEENEY (closing the discussion): I wish to thank the gentlemen for their very thorough and courteous discussion of my paper. I want to emphasize what Dr. Bodenshtab said that while the claimant may be fraudulent there is no excuse on the part of the doctor for being careless.

I think Dr. Jones in his legislation for expert witnesses in court is going to fail for the one reason that lawyers do not want good experts. You remember when Prendergast assassinated Carter Harrison the State's Attorney sent for Doctors Brown, Brower, and Church, men of the highest reputation, but the county attorney sent for doctors from the highways and byways who knew nothing of psychiatry. He wanted poor witnesses. I think Dr. Jones has an entirely wrong conception of the functions of a court. I think the function of the court is best explained by Rastus, whom the attorney was joshing: "Do you know what this place is, Rastus?" "Yas sir, dis am de Cote House." "What is the Cote House, Rastus?" "The Cote House am de place where justice am dispensed—with." Rastus was not far from the truth.

PEDIATRIC CLINIC*

By EDGAR J. HUENEKENS, M.D.

MINNEAPOLIS, MINNESOTA

The history of the first case I wish to present this morning is as follows:

CASE 1. *Poliomyelitis*.—The patient is four years old. She was first seen on April 28, 1926, with a history of "flu" ten days before. She had not used the right arm since that time. The right leg had been weak, and she had fallen down frequently. The temperature is normal at present, and the reflexes are present, but rather sluggish in the right arm. The white blood count is 10,600. The tonsils are large and adherent to the pillars.

Previous to the time she was first seen she had a very high temperature, 104° F., but was not very ill. You can see that she has now practically recovered. She can walk without limping at all, although she limped some days ago. She can now use both arms, although ten days ago she could not use the right arm and had little use of the left.

The main question in this case is the diagnosis. The history seems to me typical of a mild type of poliomyelitis, or infantile paralysis. During the recent epidemic in Minneapolis we have had many of these very mild cases. We have seen some patients who limped for only a couple of days, and still gave all the signs of poliomyelitis, as shown by the spinal fluid findings. In this case the spinal fluid was not taken, but I have no doubt if it had been there would have been

an increased cell count in the fluid. The speedy recovery is no argument against the diagnosis of poliomyelitis.

If the attack had been more severe the question of treatment would come up. In this case with the girl limping with one leg and inability to put one arm up to the head the condition calls for definite treatment. When first noticed it is best to give supportive treatment to the muscles. It is well to put the foot up in some sort of a splint to prevent foot-drop; otherwise it may become permanent. The same is true of the deltoid. In more severe cases a splint should be applied to hold the arm up and relieve the strain on the deltoid. I have had some cases that had to be kept in splints for a year and a half, until function returned to normal.

The question of serum treatment always comes up. Rosenow's serum, in my experience, has not been very satisfactory. I have not been able to satisfy myself that it is specific and helps a great deal. All these things must be used very early, before the actual paralysis sets in. That is very difficult. Unless there is a big epidemic and we suspect this disease right along it is almost impossible to make the diagnosis in the early stages. During an epidemic one is on the lookout, and, if a patient complains of pain in the joints, that

*Presented at the Forty-Fifth Annual Meeting of the South Dakota State Medical Association, held at Aberdeen, S. D., May 19 and 20, 1926.

pain and an increased cell count in the spinal fluid should make us suspect poliomyelitis and give serum. I think the convalescent serum from a patient who has recently recovered is better in these cases. If this is not available Rosenow's serum should be used, although my experience does not lead me to expect much from it. The patients often have a marked allergic reaction, hives and other disturbances which occasion great difficulty.

I think this child probably needs no further treatment. She shows no atrophy in any of the muscles and has full control of them. I believe the prognosis is very good in this particular instance.

CASE 2. *Pylorospasm-pyloric stenosis.*—This baby is fifteen months old and is still rather thin and under weight. He weighs nineteen pounds and normally should weigh twenty-four, but at the present time he is perfectly well. The history is interesting. At the age of ten days he started to vomit slightly and at fourteen days was vomiting very profusely. Later on he vomited almost across the room. This is a typical history of pylorospasm, or pyloric stenosis. When vomiting begins on the first or second day we have to think of an organic defect in the gastro-intestinal tract. When he begins about the tenth day it is always pylorospasm. It usually occurs in perfectly normal breast-fed babies, and frequently there is a history of neurosis in one or both parents.

What do we mean by pylorospasm and pyloric stenosis? What is the difference? I disagree with many clinicians on this subject and think they are both the same thing. Pyloric stenosis always starts with a spasm and becomes a stenosis if it becomes severe enough. Pylorospasm is actually a spasm of the pylorus which becomes more and more frequent and keeps the food from passing into the duodenum. After this has been going on for a time we have the development of a tumor, just as in any muscle that is overworked, but the degree of stenosis does not depend on the size of the tumor. It is dependent on the size of the lumen, upon how much space there is for the food to pass from the stomach to the small intestine.

This condition is very interesting and, I think, is misunderstood. The first thing, I think, a physician should know about pylorospasm is that practically the only consideration is the child's weight and its gain in weight. To succeed in stopping the vomiting and not have the child gain in weight is of no value. The sole test of the success of the therapy is the child's gain in weight. If this does not occur nothing else is of value. If we get these cases early they can be treated medically, dietetically, and expectantly.

Some cases are very mild. Some children can be kept at the breast and will go on and gain in weight without any other treatment, but in severe cases this cannot be done. The very act of sucking at the breast tends to set up the vomiting. We have to give these children breast milk when it is obtainable, but not by nursing. It must be given by tube. We must not give the baby even a bottle, but must see that with the least possible exertion on the baby's part the food gets into the stomach. This measure often succeeds without anything else being done, but if it does not we must try something further. In some instances we have to use artificial food, where breast milk is not retained. The dry milks sometimes work well. In some cases lactic acid milk or the condensed milks will be retained when all else is vomited. The advantage of the dry milk powder is that we can make the food very concentrated. We can use twice as much powder as water, and often this will be retained when the normal strength of the dry milk will not be.

However, we have something better than that. Some years ago Helmholtz and Sauer instituted and advocated the thick cereal feeding. This is made up so thick that it scarcely can be swallowed, but the child will thrive on it. Sometimes it is necessary to use a tongue depressor and put the food away back in the throat, and then use another depressor and push it "over the brink." It is the consistency that counts in this. Finkelstein has recently suggested giving mashed potato instead. It is not the quality of the food, but the fact that it is retained that counts. There is quite a trick in feeding this thick cereal, and one should have a nurse who understands doing it.

If the baby is still losing weight the therapy is not a success, and then we should advise early operation. I weigh the babies carefully every day, and if I find we are not getting anywhere I advise operation.

We have the Rammstedt operation, which is a beautiful thing. It is very simple and consists only in splitting this muscle (indicating) down to the mucosa. In most instances it produces instantaneous cure. In the old days when we had only the gastro-enterostomy to depend on we were justified in hanging on to the cases of pyloric stenosis as long as possible, but now I advise this Rammstedt operation without hesitation if I have not accomplished anything after ten days.

Another thing, these babies are often brought in after they have lost a great deal of weight

and are in a serious condition. In such cases after treating the baby for a day or two and not getting anywhere I advise operation without delay. They are very poor operative risks in these instances, but there is nothing else to do, and the best plan is to give a blood-transfusion immediately before operation and again immediately afterward. We can give as much as 200 c.c. of citrated blood just before operation and again just afterward. Many babies who would otherwise die from the operation can be saved in that way.

This little patient did not have a very severe case and was fed on milk mixtures at first and then given lactic acid milk. He did not gain and kept on vomiting until he was ten months old. About the sixth month or so thick cereal feedings were instituted, and since then the child has done better. He is still under weight, but is gaining.

One thing about prolonging this treatment is that these babies often stay under weight for a long time. Before the days of the Rammstedt operation many of these children went on for many months with practically no gain, but then when the vomiting did cease they gained very slowly. They were never very well or robust. I have seen many such children die in the second year of intercurrent infections because the long starvation they had gone through had lowered their immunity. Now I think it is advisable to use the Rammstedt operation in the early months if we find that we cannot do anything for them medically. We could always try the various things I have mentioned for a time, and then operate if necessary.

The thick cereal feeding is good for babies who do not have pyloric stenosis, but who vomit. It is good for all children who vomit. It can be used as a complementary feeding in breast feeding with good results. I have used it in many instances instead of giving a bottle; just give them a thick cereal feeding. If they find they get a bottle it is an easy way of getting food, and they will not nurse satisfactorily any more. The thick cereal feeding overcomes this difficulty.

I think this child will continue to gain now and will probably have no further difficulty.

CASE 3. *Convulsions.*—Here we have a very interesting case. This little boy is two and a half years old. He weighed nine pounds at birth. The labor was slow and was aided by instruments, and the child had a slight scar over the left eye from the instruments. He was apparently normal until fifteen months old, and gained normally in weight. He was breast fed until he was thirteen months old.

He was given orange juice when about three months of age, and began having Cream of Wheat and oatmeal gruel at about six months. When he was about fifteen months old he became ill. He had a slight increase of temperature during the day, which became higher at night, and he developed a tetany which became more severe and merged into convulsions during the night. The convulsions were repeated in rapid succession until the intestinal tract was thoroughly emptied and cleansed. Since that time he has had several similar attacks. One occurred when he was two years old and lasted for three weeks, in spite of a modified diet and thorough cleansing of the intestinal tract. In July, 1925, he had another attack which followed an attack of diarrhea, but this attack was controlled in two days. The last attack occurred on May 1, 1926, and was a light one, apparently of tetany only, which cleared up in a day. His head has always been unsteady, apparently being top-heavy. He did not sit up until he was eleven months old. He began to walk at seventeen months. He loses his balance and falls easily, but is said to be improving.

The case is very instructive and is a good one for differential diagnosis. What are the various things we have to consider? We have at least five causes of convulsions which have to be considered in every case.

The first thing we must consider is organic brain disease. Encephalitis, or a chronic disease, such as tumor or birth trauma, is a very common cause of convulsions. In this case there is a history of prolonged labor and the use of instruments.

Second, we have to consider spasmophilia, a disease which is associated with rickets and usually comes on in the winter and early spring months. It is a hyperirritability of the peripheral nerves and has nothing to do with the central nervous system. Along with it we have a marked deficiency of calcium, it sometimes being reduced as much as one-half. The important thing to consider about this condition is that it can be cured very rapidly when it exists.

Third, we have to consider the convulsions which occur at the beginning of a severe infection. Pneumonia and scarlet fever are often ushered in with convulsions, the same as an adult would have a chill, and do not tend to recur.

Fourth, we have the indefinite type of convulsions in children who have an unstable nervous system. Such children develop convulsions on slight provocation, and still have no spasmophilia or epilepsy. This type of child has convulsions with teething, with worms, and so on. These are the indefinite types of convulsions and the children usually tend to get over them as they grow older. Our grandmothers were right about this.

Fifth, is epilepsy. I put this last because we

can only make a diagnosis of epilepsy when we have eliminated all other causes. This is the graveyard of diagnoses of convulsions.

First, in considering birth diseases we have to consider trauma, and there are usually other stigmata associated with it. We usually have a hypertonicity of the muscles, usually a spastic paraplegia, Little's disease. In this case there is no hypertonicity, and the muscles never have been stiff. The child, so far as we can tell from a superficial examination, is normal mentally. He did not walk until he was seventeen months old, but seems normal now. In spite of that we cannot entirely rule out birth injury. Such patients may develop convulsions over a long period.

The next thing to consider is spasmophilia, but I do not think this child has it. He has not the typical Chvostek phenomenon, which always is present in spasmophilia. If we tap such a child on the cheek in this manner (illustrating) we get a twitching of the muscles here (indicating). Even if a child with this sign has not had convulsions we can say he is a candidate for them. The long periods between attacks in this case would be against spasmophilia. In one way that is too bad, for that is one of the disorders that we can help very easily. By giving 20 per cent calcium salt in teaspoonful doses every two hours, and giving cod liver oil three times a day, the convulsions in every one of these cases can be stopped within a few hours, although they may have existed for weeks. The high calcium followed by cod liver oil is the best thing of all for such children. In every case in which you are in doubt it is wise to give the calcium chlorid because the results are so gratifying.

I might combine the third and fourth causes. Another type consists of the very small babies who get convulsions on a starvation diet. Many new-born babies get convulsions from starvation, and as soon as they get enough to eat the spasms stop.

The interesting thing I have elicited in this case is that every attack came on with a high fever. Not a single convulsion had occurred without a high fever preceding it. I think this pretty well rules out organic brain disease and many other things. It means that we have an infectious thing which is causing convulsions in a child with an unstable nervous system. If we could stop the fever we would doubtless stop the convulsions. I think this child has a focus of infection and an unstable nervous system. I believe if he had his tonsils and adenoids removed and the antra examined and washed out, if necessary, the convulsions would cease. There is evidence of chronic inflammation of the tonsils, but I do

not think the removal of the tonsils alone would be sufficient. I believe the antra should also receive attention.

In the last four or five years we have come to the conclusion that sinus infection is very common, and that among children who have their tonsils and adenoids removed, and well removed, there is often an antrum infection which is not suspected. This is becoming so important that in cases where we believe there is a focus of infection we are justified in having the antra washed out, even if they are negative in a roentgenogram. Sometimes a roentgenogram will show pathology, but often it will not. If we have a nephritis in a child we are always justified in having the antra washed out, and by this means we are getting results in many cases where we failed before. It can all be done at one operation. The beautiful thing about children is that the treatment is very simple. Before the permanent teeth erupt the antrum is situated high up, and by going in under the inferior turbinate we can get under the lower pole, and by making a slight enlargement of the oval window we can get permanent drainage, which we do not have in the adult. We do not have to go in frequently, as we do in adults. I have found many more of these cases as I look for them, but I have great difficulty in getting nose and throat men to do this because they feel that it is too radical for a young child. It is really very gratifying and you are sure of good results if it is well done. It can be done in two minutes, without any harm to the child, and with no bad after-effects whatever. I think it should be done in this child without fail.

The next thing to consider is epilepsy. This usually occurs without any apparent cause, but the attacks in this case do not come on in that way. There is always the fever, and I think we will be able to cure this case. In the cases of epilepsy sometimes a high-fat diet and low-sugar diet, with the production of acetone in the urine will relieve the cases, but in some cases this gives no results at all. However, in every case of epilepsy the Peterman high-fat diet should be given a trial.

Another word about the type of child who gets convulsions without apparent cause. They do occur with teething and with worms, but we have to have the proper type of child to bring out the convulsion—the child with the unstable nervous system.

QUESTION: How about the mental development in this child? Is there any sign of cretinism?

DR. HUENEKENS: So far as I can tell from a brief examination the child is normal mentally. There is no evidence of cretinism at all. I have every hope that the child can be cured by removal of the tonsils and adenoids and washing out the antra. They have not yet been x-rayed. Even with a negative roentgenogram. I would wash the antra anyway in this case, for the procedure does not bother the child at all and often gives brilliant results.

CASE 4. *Eczema*.—Here is another baby which I wish to present in order to be able to talk about the interesting skin condition we all know as eczema. This child is five months old. At birth she weighed seven and a half pounds and now weighs fourteen pounds and fourteen ounces. She was breast fed for two months, and was then given a modified milk mixture with Dextrin-maltose. At the present time she is receiving a mixture of sugar of milk and an alkali (Modlac tablets).

What do we mean by eczema? In the first place, eczema is always a constitutional defect and is practically always inherited. Even if these children do not show eczema at birth they have a tendency toward it and usually show it later on. It usually runs in families. Eczema manifests itself in a variety of ways and in various places, in an intertrigo in the axillæ, in the creases of the elbow—wherever the skin folds on itself is an excellent place for eczema to develop. It can appear on any part of the body. Teething has a definite effect on eczema. It does not cause eczema, but it does tend to make an existing eczema worse. For years our text-books said teething had nothing to do with it, but now some of the greatest pediatricians, including Finkelstein, admit that it does make eczema worse. I would say that about the time this child begins to get its teeth the eczema, which is now rather mild, will probably become definitely worse.

There are three things to consider in eczema: first, constitutional defect; second, external irritants, and, third, dietary measures, which tend to control it or make it worse.

As to external irritants, I do not allow these babies to be washed at all on the affected parts. I use a lotion made of four parts tragacanth, twelve parts boric acid, and thirty parts glycerin in water up to 500. This makes a sort of soapy liquid which dries over the baby's body and is allowed to remain there. Other external irritants, such as pus running from the ear, drooling, and so on—all tend to produce eczema or aggravate it. Another form of irritation is woolen underclothing. I allow no child to wear woolen underclothing, whether it has eczema or not. I think silk or cotton should be used exclusively,

for they can always be kept warm without the aid of wool. There is no reason for wearing it, although the custom is almost universal.

Regarding diet, we have had in the last fifteen years many interesting theories regarding the influence of diet on eczema, and have had to modify most of them. The one that probably had the most adherents was the high-fat diet as the cause of eczema. Probably this may be a contributing factor, but it is not the most important factor by any means. I will give you two simple dicta: If a child is under weight it should be given enough food to bring it up to normal. If it is over weight the weight should be reduced to normal. You should use foods which are the most easily digestible, and as soon as possible these infants should be taken off of liquid food and put on solids. This child, who is five months old, should have less liquids, but should be given solids with the milk which is necessary. She is about normal weight for her age, and the dietary measures will probably have no effect, but she should be given the cereal feeding, which will be good for her. The worst cases of eczema occur in the fat, pasty babies, who usually have the weeping forms of eczema. In the local treatment for these children, in the weeping form of eczema, there is one thing which is almost universal and that is Burrough's solution, alum five parts, and lead acetate twenty-five parts, dissolved in 500 parts of water, and then further diluted. As soon as the moist eczema becomes dry some form of paste should be used. The best is the C. A. T. mixture (equal parts of collodion, acetone, and crude coal tar), a very thin layer being painted over the affected parts once or twice a day. It is apparently a very radical treatment, but it works well. If the eruption itches we have to use 5 per cent resorcin or Lassar's paste with resorcin added. In the very chronic, itching types I use high percentages of oilum rusci in olive oil.

Dr. Isaac Abt has said a very interesting thing. I do not know that I can subscribe to it entirely, but he says the type of ointment used in eczema makes no difference if we use enough. The thing is to put on a thick enough layer to keep the affected parts covered at all times. I cannot subscribe entirely to that, but it is true in a measure.

QUESTION: Do you use any type of light treatment?

DR. HUENEKENS: I do not.

QUESTION: Does a free catharsis at the start do any good in these cases?

DR. HUENEKENS: I think not. We find that these children need all the water they can use in

their systems, and if we give free catharsis this dehydrates them. In the very fat babies this can be done without harm.

QUESTION: Do any abscesses of the skin follow when the eczema clears up?

DR. HUENEKENS: Usually not, unless the child is allowed to scratch the lesions. An impetigo may occur if the child is permitted to scratch itself. If the lesions are infected they are very often difficult to clear up.

QUESTION: Do you consider that allergy is ever a cause of eczema?

DR. HUENEKENS: Yes, we do, and in every case I cut down the milk as much as possible and exclude eggs altogether. Often the skin test will not show in children. Where the food tests are the most helpful are in the cases of asthma, which are somewhat related to eczema, but in eczema itself I find them very disappointing. We can get a certain amount of reaction to almost any food we use. I do not think the allergic reaction, so far as therapy is concerned, is of much value.

QUESTION: Do you find any familial tendency in eczema?

DR. HUENEKENS: Yes, there is nearly always a familial tendency and if eczema does not develop we usually find at least a tender skin.

QUESTION: Is the x-ray of any value?

DR. HUENEKENS: In some cases I think it is, but I do not use it. I will say that I never promise any parent a cure. We may have a case in which the skin will become clear in twenty-four hours from no known cause. I always warn them not to feel too much elated when the skin becomes clear, and not too downcast when it becomes affected again.

ENURESIS

I have been asked to say a few words about the subject of enuresis. That does not mean that there is anything wrong with the kidneys and bladder. It is usually found in neurotic children, but it is something more than a neurosis. Some of the most neurotic children do not have enuresis, and some of the mild cases have marked enuresis. I think many of these cases have a family tendency. I have had a mother confess to me that she had severe enuresis herself, which lasted until one year after marriage, but with the birth of her child it stopped. I think we do not usually go into the family history enough in these cases to determine the family element. We have some written directions to be used in these cases that I think are of great value, and I shall be glad to send you a copy of them if you wish.

You probably all know children who will not wet the bed except after some excitement. The children who romp with their father when he comes home in the evening usually wet the bed, for they go to bed in a state of excitement. I usually make these children sit down in a chair and keep quiet after four o'clock in the afternoon. This plan should be carried out until the habit is overcome and then can be relaxed. They are given practically no liquid after four o'clock, no soup, fruit juice, or water. This is the preliminary. I never accept a case of enuresis unless the mother will promise to carry out directions faithfully, and bring the child to my office every day. If she does not take the matter seriously we cannot get results. Why do I have them come in every day? Purely for the psychic effect on the child. I give them a talk and tell them that I can cure them of bed-wetting. I tell the mother privately that I may not be able to accomplish this, but I always tell the children that I can. I always give them a bitter medicine, such as gentian, the only effect being psychological. I always give them some electric treatment, making them feel that it is a very important part of the treatment, but it has no effect except the psychic effect. I give this the first time I see the child and the next day when he comes back if he has not wet the bed—I have had patients who have been wetting the bed for years, but who never do it again after one treatment, the night before I give just a light treatment, and tell him he is better. If he has wet the bed the night before I give a more severe treatment, but am careful not to frighten him. If you can get the co-operation of the child in these cases you will get brilliant results. If they really want to stop this treatment will certainly bring results. After they have not wet the bed for some time I have them come in every three or four days, but if they wet the bed again they must always be brought in the next day.

It is surprising that these children do not care what their parents think about their wetting the bed, or what the doctor thinks, but I find that children who do not care whether they wet the bed or not do care what their playmates will think if they find out about it. If I have a very bad case of bed wetting and the child does not care, I tell him I will have his playmates brought to the office and tell them all about it. With the timid, sensitive child we have to be very careful about the whole matter, but with the "hard-boiled" ones we can use more strenuous tactics. I had a child who wet the bed every night at home who was taken on a visit to his grand-

mother's and did not wet the bed once while he was there. He came home and wet the bed every night again. When he was away he was making a real effort not to wet the bed, and when he came home he did not care, his parents knew all about it, anyway.

What we must do is to give the child confidence in himself and in us. We must impress upon him that we can help him to stop this habit, and then we can cure him. If we can gain the child's confidence we can accomplish a cure in most instances. If I do not get results in two weeks I stop treatment altogether, and do not start again for six months. I do not usually start with a child below the age of three. If they are too young they cannot understand what it is all

about. Some children normally stop bed wetting at nine months, others not until three years. There is some element in it that we do not know about, but there is no doubt that psychotherapy does help.

QUESTION: Do you use atropin at all?

DR. HUENEKENS: I do not use drugs in these cases for their therapeutic effect, but if you do use them I think atropin is the best. If it is used it should be given up to the physiological limit, until the pupils dilate and flushing of the face occurs. It should be used to the limit in each case because there is such a difference in the size of the dose different children will stand, and unless it is used in this way it is of no value.

MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS*—PART I Continued

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MINNEAPOLIS, MINNESOTA

V. TUBERCULOSIS AT VARIOUS AGES OF LIFE

Infancy.—If we consider how infants are fondled and kissed by adults and consider also the prevalence of tuberculosis among adults, we must expect to find much tuberculosis in infancy. Again, if we consider that the infant has had little or no opportunity to develop immunity and that the bacilli may be carried to it frequently or in large numbers, we must expect to find tuberculosis a serious and often fatal disease in infancy, and medical observations have proved that tuberculosis in infancy is not only common but also serious. The works of Holt, von Pirquet, Hamburger, Kuss, Hutinel, Mantaux, Cornly, Barbiér, and Bondon, and many others have long since convinced us that, contrary to earlier opinions, tuberculosis is a common disease in infancy. Barbier and Bondon showed that of 1,000 children 200 died from birth to the first year, and of these 30 or more from tuberculosis. From the first to the second year 48 of the remaining 800 children died, and 12 of these 48 deaths were caused by tuberculosis. From the second to the third year of life, 26 of the remaining 752 children died, 11 of these from tuberculosis. Other observers, such as Kuss, Comby, Hamburger, and Bins-

wanger, have found that from slightly more than 1 per cent to 6 per cent of all deaths in children from birth to three months are due to tuberculosis. From the third to the sixth month some authors have reported as high as 18 per cent of all deaths as due to tuberculosis, while during the last half of the first year as high as 27 per cent of the deaths have been found due to this disease. Indeed more deaths from tuberculosis occur in the first year than in any other one year of the three score and ten.

The sites of the tuberculous lesions in infants have been much discussed, but evidence has accrued to show that such lesions may occur in many parts of the body. However, lesions are found much more frequently in some parts than in others. Contrary to the views of some workers the tracheobronchial lymph nodes are believed to be a fairly common site of the primary lesions in infancy. The bacilli having gained entrance to the blood stream without producing a primary lesion are carried to the mediastinal lymph nodes, which, through numerous anastomoses, communicate freely with the abdominal lymphatics, as well as with those above the diaphragm. Thus the mediastinal nodes have been likened to lymph hearts contracting and dilating because of the movements of the adjacent structures, such as the lungs and the

*This is the fifth paper in Dr. Myer's series, and is continued from June 15.—The Editor.

aorta. Thus tubercle bacilli may gain entrance to the body through the eyes of an infant being dried by the handkerchief of a tuberculous mother or through contaminated food or air finally lodged in the tracheobronchial lymph nodes, where they set up the primary tuberculous lesion. This view is held by many workers, particularly Calmette and his associates, because many cases show lesions in these lymph nodes with no evidence of past or present pulmonary lesions. Experimental evidence has accrued to show that pulmonary lesions may develop secondarily to tracheobronchial node lesions. It has not been proved, of course, that primary lesions in infancy do not occur in the lungs and other parts of the body. We know they do from the excellent works of Ghon and others; moreover, the experimental work of Gardner has shown that pulmonary lesions may so completely disappear as to leave no trace of their former existence. However, the evidence in favor of the primary lesion usually occurring in the tracheobronchial nodes is sufficiently strong to lead Calmette to state that the old law of Panot must now be inverted so as to read, "In the young child, consecutive to a tracheobronchial gland infection, whether primary or secondary, there appears almost always a more or less discrete or confluent eruption of tubercles in one or several of the innumerable lymph follicles situated in the zones of pulmonary parenchyma which are bathed by lymph sent to them by these glands." Calmette believes that the lymph in the nodes and, to some extent, in the efferent and afferent vessels ebbs and flows because of the movement of the adjacent structures. Thus it is possible for the tubercle bacilli to pass along the lymph ducts in a direction opposite to the usual flow of lymph, breaking down valves and finally reaching the lung parenchyma.

Cases have been known in which extension of disease developed from the mediastinal nodes upward to the supraclavicular nodes. However, the spread usually takes a downward course.

Possibly the chief reason for the high mortality from tuberculosis in the early years of life is the loose structure of the lymph nodes, which will be discussed later. Then we must not lose sight of massive dosage and that the lesions produced frequently become rapidly caseous and do not become fibrosed and calcified. In other words the doses are overwhelming.

In addition to lesions within the chest lymph nodes, the lungs and the meninges of the central nervous system frequently become involved. This is particularly true in children under three

years of age. Grunberg found in 209 deaths from tuberculosis among children from one to fifteen years that 82 died of tuberculous meningitis during the first year of life and 42 between one and three years. In the first year of life only 9 and in the second and third years of life only 23 died of other forms of tuberculosis. The lesions in tuberculous meningitis are secondary; although they may result from direct extension of a tuberculous lesion in a location such as an ear. Often in the child tuberculosis of the meninges is due to the rupture of a caseous lesion in a tracheobronchial node into the blood stream. Tuberculous meningitis is more common in New York City, Budapest, and Vienna than in any other cities of Europe or the United States reported by Thompson. In New York City the incidence is 3.9 per cent, this being higher than that of any city reported.

In the abdomen, like the chest, in infancy the lymph nodes are the most common sites of tuberculous lesions. Indeed, primary lesions of the intestines are extremely rare, while lesions involving the mesenteric lymph nodes are more common. Tuberculous peritonitis is seen usually after the first year of life. Thompson has pointed out that in Edinburgh and Glasgow 3.6 and 4.6 per cent, respectively, of the children have abdominal tuberculosis; whereas in New York City only 0.42 per cent of the children suffer from this condition.

Tuberculosis of the cervical lymph nodes exists only very rarely before the third year of life.

Thus it is seen that in infancy tuberculosis attacks many organs and does not show a great tendency to become localized. Krause has pointed out that the structure of the lymphatics in infancy is significant in this connection. At this period of life the lymph nodes are loosely and openly constructed. They contain very little cellular material and not much fibrous tissue; consequently the nodes do not function as such good filters as they do in later life, and foreign bodies, such as tubercle bacilli, are allowed to pass quite freely from node to node and from region to region of the body. Thus the disease often becomes quite generally spread throughout the body of the infant.

Childhood.—In the third and fourth years of life the tuberculosis scene changes somewhat. It is at this age the child develops the ability to produce fibrous tissue around a tuberculous lesion, hence the prognosis becomes better. The lymphatic system is the chief site of localization, and this in all probability is largely due, as

Krause has pointed out, to the change in the structure of the lymph nodes at this time of life. The lymph nodes are all the time becoming denser and more compact, consequently they function as better filters, and tubercle bacilli are much more likely to be caught and retained in these structures where they so often produce tuberculous lesions. This is particularly true of the tracheobronchial lymph nodes. Not infrequently tuberculous lesions in lymph nodes become latent; nevertheless throughout the period of childhood such latent lesions are capable, under certain conditions, of discharging tubercle bacilli into the blood stream, thus producing serious and even fatal results.

During the period of childhood pulmonary lesions are even less frequent than in infancy. This is true also of tuberculous meningitis. Grunberg's series of 209 deaths from tuberculosis from birth to the fifteenth year of life showed that from the third to the fifteenth years only 26 deaths were due to tuberculous meningitis, whereas during the first and second years 124 deaths were due to meningitis. In the case of pulmonary tuberculosis there were 19 deaths between the third and fifteenth years as against 25 deaths during the first two years of life. The observations of other workers have resulted in similar reports.

In the central nervous system solitary tubercles occasionally develop, particularly in such centers as the optic thalamus. This is especially true between the ages of three and ten years. After the beginning of the third year the cervical nodes are quite frequently involved. Tuberculosis of the cervical lymph nodes may be secondary to a primary lesion in a tonsil or some other part of the upper digestive and respiratory tracts. Again, the lesion may be primary in the cervical lymph nodes due to the lodgment of leucocytes containing bacilli in them. Moreover, the bacilli may reach these nodes through abrasions in the skin produced mechanically or by some other infection such as ordinary pharyngitis. Tuberculous lesions of the cervical lymph nodes may become latent or progressive, depending upon the virulence, dosage, immunity, etc.

Tuberculosis of the bones and joints usually does not occur before the third year of life. Its height of frequency is reached between the third and fifteenth years. This condition often occurs in children who have taken milk from tuberculous cows or who have been in intimate contact with tuberculous patients. Many cases follow acute attacks, often diagnosed as gastric

disturbance or grippe, but which later must be interpreted as cases of general disease resulting in localizations in the bones and joints. The lesion usually begins around the cartilaginous surfaces between the diaphysis and epiphysis, in the red marrow of the periosteum.

Among 1,000 cases of bone and joint tuberculosis, Young found 421 with involvement of the hip joint; 416 with involvement of the vertebræ; 103 with the knee involved; 33 with the astragalus involved; 17, 8, and 2 with involvement of elbow, carpal joints, and shoulder, respectively. Any of the bones and joints may be involved but those named are most common. Hunchback deformities seen in adults are often due to tuberculosis of the vertebræ in childhood. Around a tuberculous bone a cold abscess may develop. In some cases these migrate from the site of the lesion and appear on the surface at a somewhat distant point. For example, an abscess about a tuberculous vertebra may follow the sheath of the psoas muscle and appear on the surface in the inguinal region; hence the name *psoas abscess*.

Tuberculosis of the skin (*lupus*) is most frequently seen between the sixth and tenth years of life, but may occur as early as the third or fourth year. The lesions appear on the face, neck, hands, and feet, in frequency, in about the order given. This is probably because bacilli come in contact with the skin of these parts most frequently.

Tuberculous ulcers of the skin are usually secondary, that is, those developing them have other lesions. However, they may be primary in children, resulting from abrasions of the skin or in children circumcised ritually by one who transmits the bacilli directly to the incision. Tuberculous gummata and tuberculous lymphangitis also may occur in children.

Adolescence and adult life.—As the age of adolescence is reached the tuberculosis scene again changes. Pulmonary lesions begin to appear more frequently and predominate in adult life, therefore tuberculosis of the lungs deserves first place in this discussion. Here again Krause has called attention to the fact that, in addition to the lymph nodes becoming more and more compact even to shrinking, there also, because of much foreign material, has come about considerable obstruction of the afferent lymph ducts. This obstruction, of course, greatly retards the flow of lymph and certainly makes the transportation of foreign materials, such as tubercle bacilli, more difficult, consequently more lesions are set up near the portals of entry,

such as the tonsils and lungs. This is the age when lesions predominate in the lung parenchyma, particularly about the periphery.

Acute miliary tuberculosis of the lungs usually occurs with general miliary tuberculosis when many other parts of the body are involved; however, it may occur in the lungs only. It is usually due to a tuberculous lesion opening into the blood stream and thus sowing the tissues of the entire body with tubercle bacilli.

Tuberculous pneumonia is usually unilateral. In extent it may involve from a small part of one lobe to the entire lung. This condition often results from a massive infection in one who has developed little or no resistance to tuberculosis. In addition to the tubercle bacillus the streptococcus or pneumococcus is usually present. In such cases massive infiltration and consolidation develop and the disease usually ends fatally, but patients already suffering from chronic tuberculosis very often recover from attacks of tuberculous pneumonia.

Chronic tuberculosis of the lungs is a common form of tuberculosis in adults. It is this form of tuberculosis which is most commonly seen in sanatoriums for the tuberculous. The lesions usually appear first at or near the apex of one of the lungs. The infection may be due to a lesion in a mediastinal lymph node which has been in a period of latency for some time, even since the childhood of the host. Probably as many such cases and perhaps even more are due to repeated reinfections from some other source. The chronicity of the disease is believed to be due to a partial immunity which the patient's body has developed through previous infections.

About the secondary apical lesion small caseated masses appear, and there is a tendency toward healing. However, in many cases the resistance is not sufficient to prevent a slow ulcerative process which destroys the adjacent tissue. The caseous material is apt to find its way into a bronchial ramification sooner or later, and cavities result which may vary in size from that of a small grape fruit to that of a pea. These cavities become surrounded by fibrous walls which sometimes contain aneurysmal sacs produced by dilations of blood vessels whose walls have been eroded except for the intima. Frequently one of these sacs ruptures into the cavity and pulmonary hemorrhages so common in chronic tuberculosis result.

In the cavities tubercle bacilli are usually present in large numbers. The remaining healthy lung tissue is subject to invasion by bacilli carried from a cavity by way of a bronchial

ramification and which find their way through other ramifications to healthy lung tissue instead of being expectorated. Again, there may be direct extension along the lymphatics, while in still other cases tubercle bacilli swallowed with sputum may re-enter the body through the intestinal tract.

Thus the slowly developing tuberculous process continues until there no longer exists healthy lung tissue to keep the lamp of life burning. In such cases clinical manifestations of tuberculosis of other organs of the body do not usually develop until the advanced stages of the disease have been reached, when the patient is no longer able to produce or maintain much resistance. There are, however, exceptions, particularly in the development of lesions of the larynx and the intestine which may appear while the pulmonary lesions are in their early stages.

Tuberculosis of the pleura is not at all uncommon in adult life. It is secondary to a tuberculous lesion in some other part of the body, such as a tracheobronchial lymph node, a pulmonary lesion, or even a tuberculous tonsil. The acute serofibrinous form may appear suddenly in persons who apparently have always been perfectly well. In other words it may be their first manifestation of a tuberculous lesion. It is especially common about the twentieth year of life. In most cases only a small area of the pleura on one side is involved. This area most often is located at the base, next in order comes the apex, then the middle portion of the pleura. In the "wet" type an exudate accumulates in the pleural cavity which may vary in amount from one or two hundred cubic centimeters to four or five liters. In the "dry" type no exudate accumulates in the pleural cavity; otherwise the lesions are the same. In persons suffering from tuberculosis suppurative pleurisy not infrequently develops. In such cases the suppuration may be either in the presence of pneumococci or streptococci with tubercle bacilli or in the presence of tubercle bacilli alone. Suppuration may accompany the process from its outset or it may follow a tuberculous sero-fibrinous pleurisy.

Tuberculous pericarditis is secondary to a tuberculous lesion elsewhere, usually in the adjacent mediastinal lymph nodes, the peritoneum, or the pleura. If the lesion is secondary to one in a mediastinal lymph node the pericarditis may be the only manifestation of tuberculous disease. Just as in tuberculous pleurisy an exudate may accumulate in the pericardial sac or a dry condition may result.

Abdominal tuberculosis may involve any of the abdominal viscera, as well as the peritoneum. Tuberculous peritonitis usually is due to the escape of tubercle bacilli from a tuberculous abdominal or pelvic lymph node. Some undoubtedly are hematogenous in origin. Then, again, the acute form of tuberculous peritonitis, particularly in the female, may be due to an extension from a tuberculous lesion in the genital tract. The disease may take a chronic ulcerative, a fibrous, or an acute miliary form. Small or large amounts of fluid may collect in the abdomen. Quite frequently tuberculous peritonitis and tuberculous pleurisy coexist. Apparently this is due to the numerous communications between the lymphatics of the abdomen and the thorax.

Tuberculosis of the intestine is usually secondary and is borne to the submucosa by way of the blood stream or may be due to a direct attack upon the mucosa through bacilli ingested. Tuberculosis of the intestine is common among patients suffering from chronic pulmonary tuberculosis. Indeed a high percentage of those who die from pulmonary disease show very definite evidence of intestinal involvement. In the intestine the disease may appear along the jejunum, ileum, cecum, appendix, and colon.

Tuberculosis of the spleen and liver is said to be present in nearly every case with chronic pulmonary tuberculosis. The lesions usually are

small and, except miliary disease, produce no symptoms. However, liver function may become somewhat impaired, which apparently accounts in part for the digestive disturbances so commonly found in cases of pulmonary tuberculosis.

Tuberculosis of the kidney is nearly always secondary. It is estimated that 20 to 25 per cent of cases with chronic pulmonary tuberculosis also have renal tuberculosis.

Senility.—One frequently hears the statement that tuberculosis almost never occurs in elderly people. Probably this is due to the fact that in old age the disease, particularly the pulmonary form, takes on somewhat different characteristics. In old age it is usually accompanied by little or no fever, and other symptoms are slight or lacking. It develops very slowly, and frequently is diagnosed as bronchitis, emphysema, or essential asthma. Autopsy records from various parts of the world show that progressive pulmonary tuberculosis in the aged is frequent. Indeed for the number of persons living the incidence of tuberculosis is higher in old age than at any other period of life. This fact is of great significance from the standpoint of prevention, since elderly people apparently in quite good health are capable of casting off tubercle bacilli just as virulent as those from younger patients. Tuberculosis in infancy is very frequently traceable to old persons who are entirely unaware of their tuberculous condition.

CHYLOUS ASCITES*

By M. J. LYNCH, M.D.

MINNEAPOLIS, MINNESOTA

Mrs. E. F. L. was admitted to St. Mary's Hospital, Minneapolis, on September 24, 1924. The following history was obtained:

The patient is a married woman, American born, age 49, and has been a resident of this city for many years.

Family history: This is unimportant. Both parents died of unknown causes. She has one brother living and well. Two brothers died in infancy. One sister is living and well. These brothers died in early childhood from unknown causes. Her husband is living and well.

Past history: She had the usual diseases of childhood, with no history of scarlet fever, typhoid, or rheumatism. When about twenty-four years old, she had an acute illness with fever and marked jaundice. She made a prompt recovery from this illness and has had no jaundice since. She was quite ill with the "flu" in 1918, but, so far as she

knows, recovered without complications. At long intervals during the past ten years she has had some discomfort from hemorrhoids and on several occasions has noticed some slight bleeding from the bowel.

Three years ago she fell down stairs and bruised the left side of her chest and abdomen. This was quite painful for some time, but she fully recovered later.

She can recall no other illness or accidents. She has had no surgical operations.

Habits: Up to the onset of her present trouble she has been a strong, hard working woman. Her appetite was good, she slept well, seldom used laxatives, had had no disturbance of the bladder. There is no history of venereal disease.

Menstrual history: This began at twelve years. Periods were of four days duration, nominal amount, and regular twenty-eight day type. Periods have always been quite painful. Her last regular period was completed August 22, then three days later

*Presented before the Hennepin County Medical Society, March 17, 1926.

she began to flow moderately, and the flow lasted for seventeen days. She thinks this flowing resulted from a vaginal examination that was done at that time. At the present time she is not flowing.

Child-bearing history: She has had four normal children. No special difficulty during births or puerperium. No miscarriages.

Present trouble: The patient dates her present trouble from June 10, when on that date, after eating some food at a party, she became nauseated and she vomited. The nausea continued, but she did not vomit again until some weeks later. From that time on, she had no desire for food, but forced herself to eat one meal a day. She did not know her exact weight, but states she was losing weight rapidly. She soon began to notice a general weakness and complained of backache. No severe pain but some abdominal discomfort. On August 20, she noticed a swelling about the size of a hen's egg in the midline of the upper part of the abdomen. This was not painful. The mass was smooth and firm and had a definite outline. Two days after she noticed this swelling, she was taken with severe pain and vomiting, and the whole abdomen became greatly distended. She continued to have attacks of vomiting of large amounts of bitter greenish fluid which, on two occasions, contained dark-brown masses. Vomiting was not daily, and there have been periods of a week without vomiting. After the abdomen became distended, urination was rather painful and more frequent, but never more often than three times during the night.

Her chief complaints are marked weakness, nausea, attacks of vomiting, and a greatly distended abdomen. She has no disturbance of vision or hearing, no headache or dizziness, no disturbed sensation in the arms or legs, no difficulty in movement except great weakness.

Physical examination: The patient is a white woman of small stature. The skin is not clear, but she says her complexion is dark and now appears normal to her. The skin is free of eruptions and scars. She is fairly well nourished but shows loss of weight.

Head and neck: The sclera is slightly yellow. Pupils are equal and react to light and distance. Eye movements are normal. Vision is good for ordinary tests. Facial movements and sensation seem to be normal. Her hearing for ordinary conversation is normal, and her speech is clear and prompt. All her teeth have been removed. The tongue is dry and slightly coated. Tonsils small and not inflamed. The thyroid is slightly enlarged, uniform in shape, and soft in consistency; no adenopathy in neck; all movements normal.

Chest: The chest is well formed. Breath sounds clear over all portions of the lungs. The heart dullness seems normal. No murmurs present. Pulse regular and about 100 per minute. Blood pressure 108/76. Temperature, 98.3°.

Abdomen: The abdomen is greatly distended. Dullness in both flanks which shifts with position of patient. With the patient on her back, the dullness seems to extend higher up on to the abdomen from the left flank than from the right. There is a very definite percussion wave transmitted across the abdomen. The enlargement is uniform. No visible peristaltic waves. Not tender to pressure. No masses or organs can be palpated on account of the amount of fluid present. The liver dullness

does not seem to be increased upward. The kidneys and spleen cannot be palpated.

Back: The spine is normal in outline. No tenderness. All portions move normally.

Extremities: There are no deformities of bones or joints. No edema present. No tremor in outstretched hands, no loss of co-ordination, no paralysis or disturbance of sensation found. The knee jerks are present and alike on both sides. No abnormal reflexes demonstrated.

Vaginal examination: No vaginal discharge. Cervix felt and appeared normal. Uterus could not be outlined. The cul-de-sac was distended with fluid.

Rectal examination: Except small external hemorrhoids, no pathology was found.

Laboratory findings: Urine, color amber, clear, reaction, acid; sp. gr., 1.020. Albumin, very faint trace. Sugar, negative. Sediment, few leucocytes, no casts.

Blood, erythrocytes, 4,100,000 per c.mm. Leucocytes, 5,000. Wassermann, not taken.

Gastric content, Ewald test meal. Total acidity, 40.

Chemical test for blood, negative; free HCl, 0.

Feces, stools on different occasions appeared normal and were negative for blood.

Diagnosis: On account of the marked loss of weight and absence of a known inflammatory process, a probable diagnosis of malignancy was made. The history of a definite tumor mass presenting in the midline of the upper abdomen suggested a tumor of the pancreas. The difficulties of a positive diagnosis were discussed with the patient and her husband, and an exploratory laparotomy was advised and accepted.

Operation: Under local anesthesia, the abdomen was opened by an upper right rectus incision. When the peritoneum was opened, a milk-white fluid flowed from the wound. A large trocar was inserted, and from two to three gallons of fluid drained off. The fluid had the appearance of fresh cow's milk and was of about the same consistency. The fluid was homogeneous. No solid particles were seen. No odor was noticed.

The incision was enlarged, and the abdomen was completely explored. The peritoneum was smooth but cherry-red in color. No nodules or tubercles were present. The liver appeared normal in size, color, and consistency. The capsule was smooth and free of adhesions. The gall-bladder was not enlarged, normal in color and emptied freely. No stones felt in gall-bladder or ducts. No adhesions were encountered about the gall-bladder or stomach and the whole stomach was easily viewed and palpated. No pathology was found in stomach or upper bowel. The omentum was free. The fat of the omentum felt unusually firm, but no nodules were present. A small piece of the free border was taken for examination.

The stomach and omentum were turned upward out of the wound, and the lesser peritoneal cavity explored. There was a hard, firm mass in the region of the pancreas which was not moveable.

The lower abdomen was free of adhesions. The uterus was small. Tubes free; ovaries small. No adhesions were found in the pelvis. Sigmoid and rectum, normal.

The abdomen was closed with two large cigarette drains placed one above and one below the stomach. There was some serous drainage, but no milky fluid. The wound healed promptly without infection.

She was somewhat relieved by the removal of this large amount of fluid, but she continued to have attacks of vomiting and the abdomen soon became distended with fluid. She gradually lost weight and died about two months later.

Laboratory report of fluid obtained at operation: Milky fluid; sp. gr., 1.013. Smears stained with Soudan 3 show small amount of fat. Fat extracted by ether. Stained smears show a few leucocytes; no bacteria. Cultures were negative.

Autopsy: After considerable difficulty a partial autopsy was obtained. There was considerable free fluid in the peritoneum. The fluid was not milky but rather straw colored. The stomach, liver, and gall-bladder appeared normal. The peritoneum was smooth, and no enlarged glands were found in the omentum.

Mesentery: The bowel from the stomach to the anus was inspected, and nothing abnormal was found. The pelvic organs were quite normal. When the stomach was removed a large tumor in the region of the pancreas and infiltrating the posterior parietal wall was found. The thoracic duct was not identified, but must have been incorporated in the mass. Sections removed from this mass and also from the pancreas were examined at St. Mary's Hospital, and the diagnosis of adenocarcinoma was made.

Comment: Where this tumor originated is not known, but the cause of the milky fluid in the peritoneum seems clear. Pressure on the lymphatic system in the situation of this tumor would cause a damming back of the chyle. Perhaps, as Blankenhorn has suggested, the cases with low percentages of fat may be due to transudation of chyle through the walls of intact lymphatic vessels.

I cannot account for the small circumscribed tumor mentioned in the history as appearing just before the abdominal distension. There may have been a separation of the recti muscles or a hernia, but nothing was found at operation or autopsy.

Milky peritoneal fluids have been recognized for over two hundred and fifty years and have been the object of much study and investigation. A most complete study and review of the literature was reported in 1910 by two English investigators, Wallis and Schölberg. They mention 25 cases reported previous to 1860 and report 171 cases collected between 1860 and 1910.

In this series they find this condition occurring with about equal frequency in both sexes and at all ages. Most often found between the ages of 50 and 60, but has been reported in the newborn due to congenital defects.

Classification: Milky peritoneal fluids have been classified according to the belief of the various writers as to the cause of the turbidity. A true chylous fluid was milky on account of the fat

present in chyle. A pseudochylous fluid contained little or no fat, and the turbidity was supposed to be due to a great number of substances, such as serum globulin, lecithin, cholesterol, mucin, or a combination of these substances.

Chyliform ascites is chylous ascites. Adipose ascites was supposed to be due to the presence of cells that had undergone fatty degeneration.

The greatest difficulty in explaining the nature of so-called pseudochylous fluids arose from the examination of milky fluids that contained little or no fat. Other substances present, chiefly some form of albumin, were given as the cause of the turbidity. Pseudochylous fluid was not chylous fluid but something near it. Both fluids are alkaline in reaction. The specific gravity of the pseudochylous is lower than the chylous 1008 to 1014, while chylous was 1018 or 1020. Sugar, urea, and other substances found in the blood are present in both. Both fluids are generally sterile and contain leucocytes and lymphocytes in varying amounts. The work of Dr. M. A. Blankenhorn, of Cleveland, has cleared away this difficulty, and he states all terms except chylous should be dropped in describing milky peritoneal fluids. By the most careful chemical and physical tests he has definitely shown that the turbidity is always due to fat. The explanation is that the fat is held in the fluid in a colloid state and that the emulsion of fat as it exists in chyle is so stable that it resists the ordinary methods of separation; that the fineness of the division of fat globules is more of a factor in turbidity than the amount of fat present. He shows that fluids that are cleared by precipitation of proteids also contain fats and that the fat is precipitated at the same time as the protein. He shows that turbidity can be caused by 0.02 gm. of emulsified fat per 100 cubic centimeters.

This work is of great importance, for it proves that all milky peritoneal fluids contain chyle.

What are the causes of chyle in the peritoneal cavity? The same physical forces that apply in the production of serous ascites, such as ruptured vessels, passive congestion resulting from new growths, or inflammatory masses making pressure on vessels, increased permeability of vessels caused by malnutrition, hold for the chyliferous system, as well as for the blood stream. There is one other source that should be mentioned, namely, the possibility of direct transudation of milky serum from the blood stream in cases of lipemia. This condition would be recognized by the blood examination.

Wallis and Schölberg give the following figures for their cases:

A. Malignant growth of abdominal organs —81 cases.	
B. Infections,	
Tuberculosis	33
Chronic peritonitis.....	9
Syphilis	3
Cellulitis	1
	—
	Total.....46
C. Affections of thoracic duct and lymphatic system—37.	
D. General diseases,	
Cirrhosis of liver.....	28
Nephritis	22
Amyloid disease.....	4
Mortus cordis	14
Thrombosis of blood vessels.....	10
	—
	Total.....78

It will be seen from the great variety of conditions in which chylous ascites occurs that the aspiration of milky fluid is far from a diagnosis and lends but little in the way of prognosis, but the work of Blankenhorn in placing the source of the turbidity in the chyle and eliminating so many other proposed causes is of real practical value.

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BOOK NOTICES

INTERNATIONAL CLINICS. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, in collaboration with others. Volume I. Thirty-fifth series, 1925. 301 pages. Illustrated. Philadelphia and London: J. B. Lippincott Co., 1925.

This is a book of nearly 300 pages containing a miscellaneous collection of articles by men located all the way from Pasadena, California, to Geneva, Switzerland. Alongside an article on "The Surgical Diseases of Meckel's Diverticulum" by Frederick Christopher, M.D., F.A.C.S., Chicago, comes an article entitled "Macrobiosis and the Goddess Hygeia" by Charles Greene Cumston, M.D., of Geneva, Switzerland. The subjects discussed are so varied that no logical arrangement is possible.

The first thirty pages are given over to clinical lectures by Dr. Lewellys F. Barker, of Johns Hopkins University. He discusses a case of staphylococcus septicemia, exhibiting in succession meningitis, together with signs of multiple miliary emboli, later a phlebitis, then a pericarditis with effusion, alive after four and one-half months and with a normal temperature but with signs of a latent infection still. The treatment of general sepsis is

discussed under the heading of (1) removal of primary focus; (2) sterilization of the blood by *a* immunotherapy and *b* chemotherapy; and (3) general supportive measures.

In another lecture Dr. Barker discusses the treatment of psychoneuroses and of the milder forms of psychoses. He deplores the lack of medical education in regard to neuroses and the basic sciences of psychology and sociology but notes a change for the better at present in this regard. A case is presented with extensive comment on the psychology of his neurosis and on his treatment.

Dr. Charles D. Lockwood, of Pasadena, California, discusses "Group Medicine," analyzing its advantages and disadvantages, and listing what he considers essential factors for a successful clinic.

Dr. C. Judson Herrick, of Chicago University, has an article on "The Visceral Nervous System." He takes the evidence indicating that the nervous system as differentiated tissue arose phylogenetically among the polyps, jellyfish, or some similar very lowly animals as a diffuse nerve net consisting of a syncytial mesh work of protoplasmic strands with nuclei of component nerve cells at the nodes of the net work. Thereon he develops the thesis that we may in general recognize the following levels or grades of organization of visceral control: (1) some measure of intrinsic non-nervous tone and automaticity; (2) the interrelation of visceral activities by endocrine agencies; (3) local regulation by the intrinsic autonomous sympathetic ganglionic plexuses; (4) central regulation through the cranio-spinal sympathetic arcs, the efferent path going by way of preganglionic and postganglionic neurons; (5) superposed upon these is a series of cerebral visceral centres,—bulbar, thalamic, striatal, cortical, and perhaps several others.

Dr. Thomas M. Dorsey, and Dr. Rudolph Monaco, of the University of Louisville, present a paper entitled "Some of the Urological Problems most frequently encountered in daily practice." They stress particularly the importance of the general practitioner using all simple tests within his power to determine the urologic diagnosis. The general practitioner is urged to realize the seriousness of many conditions occurring within this field. In another paper Dr. Dorsey, with Dr. Frank C. Bohannon, reviews the causes of pyuria and enumerates the many methods of scientific investigation necessary in arriving at an accurate diagnosis.

Dr. Frederick Christopher of the University of Illinois Medical School of Chicago, presents a carefully prepared work on "The Surgical Diseases of Meckel's Diverticulum," and a case of acute diverticulitis with perforation is presented. A long bibliography is appended.

Dr. Arthur Van Harlingen, of Philadelphia, presents a short article on "Eczemaform Ringworm."

Dr. James Burnett, of the School of Medicine of the Royal Colleges, Edinburgh, Scotland, treats shortly of "Exophthalmic Goitre in Children." He states that the prognosis in children is, on the whole, better than in the adult. As to treatment, his only positive recommendation is a diet containing plenty of milk and vegetables and the administration of tincture of iodine.

Dr. Charles Green Cumston, of Geneva, Switzerland, presents a paper entitled "Macrobiosis and the Goddess Hygeia." He delves into historical writings to bring to the light of modern times the

theory of a number of different thinkers regarding longevity.

There are three papers grouped under the title, "Mental Disturbances." The first is by Edouard Retif, of the Department of the Rhone, France, entitled "Remarks on the Psychology of Paranoia." The second is by Dr. Ralph C. Hamill, of Northwestern University Medical School, Chicago, on "Amnesia and Pathological Stealing." The third is by Dr. Alfred Gordon, of Philadelphia, on "The Psychoneuroses in Relation to General Medicine."

There are several articles on surgical subjects. Dr. W. Wayne Babcock, of Temple College Medical School, Philadelphia, presents, briefly, three illustrative cases of "Penetrating Wounds of the Skull." Dr. Max Thorek, of Chicago, presents a long article on "The Treatment of Chronic Suppurations Especially of the Bones" by the use of aluminum potassium nitrate. Dr. J. Clarence Keeler, of Jefferson College and Hospital, Philadelphia, urges the early diagnosis of mastoid diseases by the general practitioner, and discusses the treatment in general. Dr. Charles J. Drueck, of the Post Graduate Hospital and Medical School, Chicago, discusses "Malformations of the Anus and Rectum." Dr. L. Wallace Frank, of Louisville, Kentucky, in a couple of pages presents four cases of acute osteomyelitis with comment on the same. Dr. I. A. Lederman, of Louisville, Kentucky, presents a short paper entitled "Observations on Intranasal Lesions." He mentions many symptoms and conditions that are frequently referable to nasal pathology, and then discusses in general the treatment for the said pathology.

Dr. Hubert Blanc, of the Faculty of Medicine in Paris, France, presents a paper entitled "Death from Tobacco." The general conclusion seems to be that tobacco appears incapable of producing atheromata of the vessels or lesions of the myocardium which are the cause of angina pectoris. It can, however, produce mild attacks of angina which disappear when tobacco is discontinued and are serious only in the presence of pre-existing severe arterial changes.

The last seventy-five pages of the book are given over to a résumé of the progress of medicine for 1924 under the editorship of Henry W. Vattell, Lieutenant Colonel, Med. O. R. C., U. S. A., Philadelphia, and James F. Coupal, Major, Medical Corps, U. S. Army, Washington, D. C. After a few introductory remarks various subjects are taken up in alphabetical order, encyclopedia style, from acclimatization through insulin to whooping cough. A whole page of references is appended.

—CHARLES HUTCHINSON, M.D.

MATERNAL MORTALITY; THE RISK OF DEATH IN CHILD-BIRTH AND FROM ALL DISEASES CAUSED BY PREGNANCY AND CONFINEMENT. By Robert Morse Woodbury, U. S. Department of Labor, Children's Bureau Publication No. 158.

This is a publication from the Children's Bureau, United States Department of Labor, Bureau publication No. 158. Price twenty-five cents.

The complete title of this publication is "Maternal Mortality; the Risk of Death in Childbirth and from all Diseases Caused by Pregnancy and Confinement."

Dr. Woodbury has made an extensive statistical study and analysis of factors entering into puerperal

mortality. He has published these analysis in this pamphlet of 163 pages which is carefully arranged and also well indexed.

The author has brought together the available statistical material of this country and of foreign countries. He considers the high mortality rates in the United States and finds that they are among the highest in the civilized world and that there has been but a slight decrease in these rates since the beginning of the present century. The significance of these facts is of national importance due to the loss of the lives of many women who are in their prime and the associated loss of infant lives. The author states that a considerable proportion of infant deaths under one year of age occur during the first month of life, and approximately 100,000 infants die annually under one month of age. He also states that about 100,000 still-births occur annually, and concludes that the same measures that should be instituted to save the lives of mothers will also contribute toward the saving of these fetal lives. The author states the annual number of maternal deaths on the basis of the 1921 birth-registration area to be 18,281. He thinks probably that the error in these cases is about 12 per cent, which would make the actual number nearer 20,000 women. The maternal mortality rate for 1921 was 6.8 per 1,000 live births, and the provisional rate for 1924 was 6.6. The trend of the maternal mortality rate since 1900 shows an increase from 13.3 per 100,000 population in 1900 to 16.9 in 1921. The comparison with other countries shows that the United States ranks with those having the highest rates, such as New Zealand and Chile. Among the countries having less than half this rate are Denmark, Finland, Italy, Japan, the Netherlands, Norway, Sweden, and Uruguay.

The author also considers the causes of maternal mortality. He considers the economic factors, compares the city and country rates, and concludes that maternal mortality is largely preventable. He makes certain recommendations for the prevention of maternal mortality and outlines the following preventive program:

1. Regulation of the practice of obstetrics by requiring a license to practice from both physicians and midwives, by establishing minimum requirements for obtaining such a license, and by defining and prescribing penalties for malpractice.
2. Regulation of public and private hospitals and maternity homes through legal provisions governing the establishment of such institutions and requiring that they be licensed and subject to inspection.
3. Legislation for the control of venereal diseases including the making of these diseases reportable.
4. Requiring that puerperal septicemia be made reportable, as is now the case in a number of states.
5. Provision through Governmental or public sources of better facilities for training medical and nursing personnel and more adequate clinics, hospitals, and maternity homes.
6. Subsidies in aid of State or local activities by Federal or State governments, as in the United States during the past four years through the Maternity and Infancy Act.
7. Educational work directed toward informing mothers of the need of adequate maternity care.

—FRED L. ADAIR, M.D.

THE JOURNAL-LANCET

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"OUR DOCTORS"

We have been much entertained recently by a book called "Our Doctors." It is a novel of to-day and was written by a Frenchman, Maurice Duplay, and was translated from the French by Dr. Joseph Collins, a neurologist of world-wide repute. The book deals with what doctors do in Paris, but it differs in no particular from what they do in other places, in other cities, and even in the smaller towns. It recites, first, the introduction and history of Claude Manceaux, an old-time practitioner who, as his years advanced and his infirmities increased, became the confidant and advisor of many of the younger men.

Its theme is that of a man, one Professor Daruel, who became prominent in his surgical practice, and, like many another man, became very much impressed with his own importance. He was a powerful athletic figure, good to look upon, but his eyes were filled with a cold and steely glitter as if he were sure of himself. He was affected and became striking in appearance and followed his old guide and former associate by wearing a black skull cap with an astrakhan band. In building up his large practice and in his wanderings through the hospital wards he was followed by internes, students, and visitors, all of whom stood in awe of him, their master. He was blunt, sarcastic, and dis-

courteous in his comments, criticisms, and methods. He sometimes flew into a rage over minor things if his knife was not sharp enough or his forceps had lost its grip, and he would hurl the offending instruments away from him, and then he was a genius, at least in display, and he knew no restraint.

However, he became a man who was marked as an eminent man of Paris. He was a bachelor, well educated, and brooked no interference. Two of his medical students were women, and it was not uncommon for him to vent his sarcasm and abuse upon them although they both thought so much of him that they followed him in spite of his brutality and his indifference. Evidently both of them thought to gain his confidence and perhaps his attention. The students were afraid to ask him questions, or when he asked a question they hesitated about an answer, which he treated in his usual dictatorial manner. He went on with his work from hospital rounds to private practice and rapidly increasing consultations, all of which stimulated his egotism and made him more and more a man of activity, a man of reputation, and a man who created admiration in spite of the discord that surrounded him. Yet he did not limit himself entirely to his work. He was active in all large social events and went about in the evening seeking what pleasures he might, and with his impressiveness he was very much sought out. In spite of all his brusque manners and attitude he did, as most men do, a great deal of charity work, and sometimes he was exceedingly gentle with his poor patients. He formed new acquaintances with women, he sought women, and, as likely as not, was not indifferent to their charms. At the same time he was not carried away beyond his desires, and, after one or two affairs, he found that the attendance at the best salons in Paris bored and disgusted him, and he also discovered that he was much more interested in simplicity and romance. Naturally he had his enemies who talked about him, who discussed him, and attempted to block his way, but, in spite of all, he crashed through the obstacles and overcame all his enemies and opponents. Yet when he got into trouble of any kind, particularly in his practice, he sought out his old chief, told him his troubles, asked his advice, and profited thereby.

But the time came when he went to a distant village at the earnest solicitation of a friend to see a poor man. He was then the doctor, and he did everything he could for the sick patient. But in his intimacy with the family he met a

young woman in whom he immediately became interested. This led through devious paths to a deep attachment, and ultimately he took this woman with him, after the death of her father, to Paris, established her in an apartment, and ultimately married her. But he was horrified on one occasion to discover that she had a growth in her breast and having been a careful investigator of the cancer problem he recognized at once that it was malignant. He became more and more devoted to her and realized the uncertainty of the duration of her life. He had been performing many experiments in order to find a cure for cancer, had read papers before medical societies and thought he was finally on the track of an injection method which would cure the disease, and not until very much later did he realize that his scientific experiments had landed him on an uncertain pedestal. After an effort to save the woman he loved he found to his dismay that his experiments had not been carried far enough and even after her death he prolonged his research work and finally gave up the problem. He had found nothing after these years of labor and experimentation that was a cure for cancer.

Then, too, in his consultation work he occasionally met a man for whom he conceived an absolute distrust and was ready to annihilate him professionally, but wiser and older heads persuaded him during a consultation that he was rather hasty in his judgment, that his conclusions were looked upon as inflammatory, and he was overcome in his effort to condemn a man that he thought was an irregular.

So the story goes on, perhaps he becomes softer in his manner, but still earnest and tireless in his methods. He finally mellowed as his troubles, worries, and anxieties increased. How many of us can think back in our professional careers and wonder why we were led into the same errors this man encountered. The early enthusiasm of youth, the maturer judgment of age, and finally a tolerance developed. We have all been through that same experience. We have been harsh, unnecessarily critical, and full of petty jealousies, sometimes malignant jealousies, which led us to comment caustically and sarcastically, and we become condemnatory, all to what purpose?

Even in the large cities a group can easily be picked out who could be classed with this man and his work and life in Paris. We are led to wonder whether in time we might not be more conservative in our efforts, more liberal in our views, and with less vindictiveness. One may

glance over the cities of Minnesota, large or small, and find the same kind of men in evidence. There are comparatively few places where the practice of medicine is carried on actively in which there is not a danger that we may fall into the same line of distrust and vent our spleen upon some man who is either ignorant or overconfident or, sometimes, unscrupulous. We have had many striking illustrations of this in our own locality, and it is very difficult to restrain ourselves, to learn to keep our mouths shut, to learn that while we are criticizing others some one is criticizing us. The answer to this medical situation is a very difficult one, and depends entirely upon the individual. He must make his own life count for what is best in medicine, and, if he is careful, observant, and tolerant, he will always remain at the head of his profession.

This book is really one very difficult to review in a short editorial, but all doctors would profit by the reading of it. They might find themselves suddenly slapped in the face or hauled up short in their efforts to go on with their work, or they would suddenly be confronted with a picture of themselves powerfully delineated, true to the letter, but all would gain something after a careful consideration and survey of themselves and their associates.

ETHICAL PUBLICITY

THE JOURNAL-LANCET is pleased to call attention to the *Medical Pocket Quarterly* published by Reed and Carnrick, Jersey City, N. J., and to note that this firm which has always been an ethical producing firm, is going to attempt, what has not been tried before, a giant campaign of publicity, and they propose to "boost the doctor." And they also propose to keep absolutely away from anything that suggests that this is to be carried on without any advertising on their part. They propose and have worked out a plan with the aid of the best publicity counsel that they can obtain, to try to reach this fall, over a period of ten weeks, the editors of practically every newspaper in the United States, with stories and articles, to boost the family physician. They think in this way, providing the newspapers accept the effort, to reach 7,000 newspapers with a circulation of over twenty million, in order to inform the public of some of the forgotten facts of the physicians' hard work and long hours, and who receive less pay, in the majority of instances, than do bootblacks, barbers, and machinists. They have accumulated facts that prove, even to the muddled

mind, that doctors are earning only three dollars a visit, though that price was established when the cost of living enabled a laborer to get along on sixteen dollars a week, whereas to-day he requires triple that sum to get the same living. Consequently, it shows the doctor is underpaid, bound up with red tape and the innocent victim of well-meaning meddlers.

They also show that physicians are responsible for all the sweeping innovations which have extended human life over ten years and which will, in the future, extend it another decade by eliminating the plagues and fevers which in the past have swept millions to an undeserved death.

In all of these experiments and discoveries, which are highly scientific, they will endeavor to show that the doctor and the research worker are responsible for the improvement in medical work. This is a tremendous undertaking and will cost a lot of money, and yet they expect to put it over with articles written by prominent men, in spite of the fact that it costs a great deal of money to publish these articles together with the postage. It is rather difficult to estimate the clerical work necessary in getting a campaign into the mails and incidentally to get it into the press. Nothing objectionable will be offered, nothing but what is true, nothing but what is helpful to the public. If the newspapers do their part it will show the public that the man of medicine who is doing his work seriously for the benefit of his patients is really one of the biggest life-saving factors in the country.

We wonder if we have the courage to sponsor this mighty matter. Will we scoff at it, or will we befriend it? The editor of THE JOURNAL-LANCET has always been in favor of ethical publicity for the doctor's sake, and in spite of the occasional appearance of a doctor's name in a newspaper he has felt no reaction of distrust under those circumstances. Anything to get the doctor before the people in his true light will be of great advantage to both the people and the doctor. It has been suggested in their program that every doctor must see the editor of his local newspaper and let him know that he will be greatly interested to see what he is going to do when the articles appear. As it is now, the various important medical journals of the country are being quoted in the press, that is, in abstract, beginning with the *Journal of the American Medical Association*, *Hygeia*, and even the journals of the Northwest. But somehow the editors of the press are a little uncertain about the real attitude of the doctor. They say that they publish some news that is important to the

world, and they sometimes forget that that news is beneficial to one class or one group of men. This should not be so. Every man should participate in the benefits that may arrive from honest, faithful publicity.

The Minnesota State Medical Association is deeply interested in a local publicity committee in each component society. We have had that in Minneapolis for a number of years, and this committee is called upon to express an opinion about new discoveries, whether they are worthwhile or not, and the publicity has been given out without the name of the informer.

THE JOURNAL-LANCET and its readers, we are sure, are practically unanimous in the support of anything that will improve the health of the people, and we are sure they will put aside any prejudices that they have in order to distribute something worthwhile to the public, even though they suffer a reduction in incomes.

NEWS ITEMS

Dr. W. B. Heagerty has moved from Grand Rapids to Pine City.

Dr. A. A. J. Lang has moved from Sanborn, N. D., to Jamestown, N. D.

Dr. August F. Jensen has moved from Willow City, N. D., to Rugby, N. D.

The formal opening of the U. S. Veterans' Hospital at Hot Springs, S. D., will occur on October 20.

Dr. William Davis, of St. Paul, has returned from his summer vacation spent in his Cape Cod summer home.

The handsome and commodious building of the Quain and Ramstad Clinic of Bismarck, N. D., will be completed some time in November.

The license of Dr. T. G. Thompson, of Sioux Falls, S. D., to practice in the state has been revoked by the State Board of Medical Examiners.

Dr. A. O. Aaker, of Velva, N. D., has purchased the residence of Dr. A. J. McCannel, of Minot, N. D., who recently moved to Oregon.

The Cass County (Fargo) Medical Society of North Dakota has offered to immunize, free of cost, the public school children of the county against diphtheria and smallpox.

Dr. R. C. Rasmussen, who has been practicing in both Harvey and Drake, N. D., will confine his practice to Drake, and he hopes to see a community hospital soon established in Drake.

Dr. A. C. Strachauer, of Minneapolis, has gone East to attend the International Cancer Symposium, which is being held at Lake Mohonk, N. Y., under the auspices of the American Society for the Control of Cancer.

Dr. C. R. Tompkins has moved from Oberon, N. D., to Grafton, N. D., and will be associated with Drs. Countryman and Suter. Dr. Tompkins is a Rush graduate and has practiced eight years in North Dakota.

Dr. R. W. Furnam, of Glendive, Mont., has moved to California. He will be succeeded on the staff of the N. P. Hospital at Glendive by Dr. H. J. Hall, of Change Island, Newfoundland. Dr. Hall is a Minnesota graduate.

Dr. J. P. Harkins, of Beaver Dam, Wis., an eye, ear, nose, and throat specialist, has joined the Clinic of the Drs. Rindlaub, of Fargo, N. D., to take up the work of Dr. Harkins, who has moved to Pierre, S. D., to do surgical work.

Dr. H. L. Youtz, of Des Moines, Iowa, a graduate of Johns Hopkins, has been appointed a member of the faculty of the State College, of Brookings, S. D., as Professor of Hygiene and Public Health, and to act as college physician.

Dr. Walter J. Marcley, of Minneapolis, was elected president of the Trudeau Association of Minnesota, and Dr. E. S. Mariette, of the Glen Lake Sanatorium, was re-elected secretary-treasurer at the Association's annual meeting last month.

A report of a case of Malta fever of bovine origin in South Dakota was made by Dr. D. A. Gregory, of Miller, S. D., at the last meeting of the Huron Medical Society. A Huron paper gave generous space to the announcement of this unique case.

Dr. R. C. Gray, who has been associated with Dr. C. A. Oliver, at Graceville, for the past two years, has located at Cook. Dr. Gray is a Minnesota Medical School graduate, class of '23, and takes up practice in a new community splendidly equipped for his work.

Dr. Anson J. Golden, of Minneapolis, died last week at the age of 79. He was a graduate of the Medical School of the University of Vermont, class of '73. He practiced two years in Wisconsin and came to Minneapolis in 1885. He was coroner of Hennepin County for four years.

Dr. F. M. Munson, who has been Health Officer of Sioux Falls, S. D., since February, has been called to Paducah, Ky., to become the

first full-time Health Officer of that city. It is said that he was recommended for the position by the School of Medicine of Yale University. His successor will not be appointed for some time.

The Hennepin County Tuberculosis Association has proposed two advanced projects for helping patients who have been treated in the County Tuberculosis Sanatorium at Glen Lake. One is to conduct a vocational training shop, and the other is a shelter home for patients who have no suitable home to go to when discharged from Glen Lake.

Dr. Harvey N. Rogers, of Farmington, died last month at the age of 89. Dr. Rogers was a graduate of the Eclectic Medical College of Pennsylvania, class of '65, and had practiced in Farmington for thirty-three years. He was a veteran of the Civil War and was a highly respected citizen of the city in which he had practiced a third of a century.

The Children's Clinic of Minneapolis, which has been located at the Abbott Hospital for the past six years, has dissolved partnership, and ceases to exist. Dr. N. O. Pearce and Dr. Rood Taylor have opened offices in the new Yeates Building. Dr. F. C. Rodda and Dr. E. F. Robb are contemplating locating, in the near future, in new offices on Lyndale Avenue South.

The Camp Release Medical Society held its annual meeting at Granite Falls last month. Papers were presented by Dr. J. T. Christison, St. Paul; and Drs. F. S. Adams and G. B. Eusterman, of the Mayo Clinic. The following officers were elected; President, Dr. A. A. Passer, Olivia; vice-president, Dr. M. A. Burns, Milan; secretary-treasurer, Dr. L. J. Holmberg, Canby.

The Southern Minnesota Medical Association holds a one-day meeting at Winona on Wednesday, October 18. The program consists of about twenty formal papers, a large number of case-reports, and discussions of some of the reports and papers. Dr. W. T. Coughlin, St. Louis; Dr. H. Winnet Orr, Lincoln, Neb.; Dr. R. C. Coffey, Portland, Ore.; Dr. E. Andrews, Chicago; and Dr. W. J. Mayo, Rochester, will present papers.

The Mankato Clinic formally opened its new Clinic building, corner of Main and Broad Streets, Mankato, on Wednesday, September 29. The Clinic consists of thirteen physicians and surgeons, and was organized January 1, 1916. The Clinic is composed of the following physicians.

Internal Medicine: H. J. Lloyd, M. D., E. L. Schield, M.D., M. I. Howard, M.D.; Surgery: J. S. Holbrook, M.D., F.A.C.S., A. E. Sohmer, M.D., F.A.C.S., C. J. Holman, M.D., F.A.C.S., W. C. Stillwell, M.D.; Obstetrics and Pediatrics: G. A. Dahl, M.D., R. N. Andrews, M.D., M. I. Howard, M.D.; Eye, Ear, Nose and Throat: V. I. Miller, M.D., J. T. Schlesselman, M.D., E. W. Benham, M.D.; Radiology and Physiotherapy: A. J. Wentworth, M.D.; Orthopedics: J. S. Holbrook, M. D.; Urology: A. E. Sohmer, M.D.; Clinical Pathology: E. L. Schield, M.D.

The Cass County (N. D.) Medical Society

The Cass County Medical Society held its first meeting of the fall September 8, at the Commercial Club, Fargo.

The Society unanimously voted to co-operate with the City Health Department in offering free toxin antitoxin and smallpox vaccination to preschool and school children.

The Society also unanimously voted to take up the study of periodic health examinations of the adult as a society project.

Dr. John Rindlaub spoke briefly in tribute to the late Dr. Wadel. The scientific program consisted of papers by Dr. William Long and Dr. W. C. Nichols on the use of the electrocardiograph in the handling of heart cases. This program was exceptionally well received.

—LESTER J. EVANS, M.D.
Secretary

The Stutsman (N. D.) County Medical Society

The Stutsman County Medical Society met at the offices of the Stutsman County Clinic on September 14.

Dr. James F. Cooper, of the American Birth Control League, addressed the Society on Birth Control. He gave one of the best papers that have been presented before the Society this year.

The following doctors were present: Drs. Winn, Bailly, Nolte, Movius, Woodward, Wink, Wood, DePuy, Main, Berg and Artz, of Jamestown; Dr. Lang, of Montpelier; Dr. Todd, of Medina; Dr. Longstreth, of Kensal; Dr. Carpenter, of Pingree; Drs. Moore and Crosby of Valley City; Drs. Guest, Coopeland, and Weeks, of the State Hospital for the Insane, Jamestown.

—H. M. BERG, M.D.
Secretary

The Hennepin County Tuberculosis Association

Dr. Edouard Rist, one of the foremost physicians in France, interested in the problem of tuberculosis will speak at a dinner meeting in the Gold Room of the Radisson Hotel, Tuesday evening, October 12, at 6:30.

The coming of Dr. Rist has been arranged by the Hennepin County Tuberculosis Association. Dr. Rist, who speaks perfect English, is in this country studying tuberculosis work, following his attendance at the meeting of the International Union Against Tuberculosis held in Washington, D. C. in October.

As co-director of the Laennec hospital and dispensary for tuberculosis work in Paris, Dr. Rist

is associated in directing probably the most important free tuberculosis dispensary in the French city.

He will speak in Minneapolis on "Diagnostic Pitfalls in Pulmonary Tuberculosis," and has not only his long experience at Laennec Hospital as a background, but he had a wide experience in the late war in the examination of army recruits as a tuberculosis expert. Dr. Rist is reputed to be a clinician of the highest order.

Invitations to the dinner meeting have been sent to physicians, social workers, nurses, members of the City Council and the Board of Tax Estimate, and members of the Hennepin County Tuberculosis Association.

—B. R. MACDONALD, M.D.
Publicity Secretary

Public Health Meetings in Minnesota

The Minnesota State Medical Association, through Dr. George Earl, Health Day subchairman of the Public Health Education Committee, and Dr. E. A. Meyerding, Secretary of the State Medical Association, has arranged for a series of four Health Day programs to be given in Southern Minnesota cities for the purpose of acquainting the public with the truth about health.

Co-operating in promoting the program will be the Minnesota Public Health Association, the State Board of Health, the University of Minnesota Medical College, and the Minnesota State Medical Association.

The four cities visited, which will draw from the surrounding communities, will be Blue Earth, October 26; Fairmont, October 27; Pipestone, October 28, and Worthington, October 29.

Physicians will be brought to each place to give short talks on pre-natal hygiene, vaccination as a disease preventive and other health topics.

Morning programs will be largely for the children in schools, where Chew Chew, the Health Clown, will give them his own form of "lectures" on how to retain soundness of body. During the afternoon and evening meetings health exhibits will be shown and films thrown upon the screen illustrating facts pointed out in the talks. A health playlet and other instructive entertainment will be among the incidental features.

Strong local committees have been appointed in each city consisting of many of the most prominent citizens who show marked enthusiasm to have the Health Day program an unqualified success.

Technician Wants Work

Have had two years experience as technician and over two years of nurse's training. Best of references. Address 223, care of this office.

Minneapolis Lease of Office to Sublet

An attractive suite of rooms in the Donaldson Building, Minneapolis will be sublet. Address 224, care of this office or telephone Geneva 2564.

Locum Tenens Wanted

For six months beginning at any time now. Anyone interested may write for information. Good income and collections. Address 209, care of this office.

Physician Wanted as Associate or Substitute

Fine location in a county-seat town on a lake in Northern Wisconsin. Population, 4,000. Good schools, churches, etc. Address 211, care of this office.

Good Opportunity

To join a small group in a community of 40,000. Specialty: obstetrics; children's diseases; eye, ear, nose, and throat work; or internal diseases. Address 208, care of this office.

Office Position Wanted

By a competent young woman of some experience and best of references. A good stenographer. Will render faithful service and begin on \$12 a week. Address 210, care of this office.

Physician Wanted

A good doctor is wanted for a town and country practice in a good South Dakota town. Easy competition. Give age and all information in first letter. Address 214, care of this office.

Position Wanted by Graduate Nurse

In Twin Cities in a doctor's office or clinic. Have had over two years experience in physiotherapy and some x-ray and laboratory work. References furnished. Address 222, care of this office.

Part-time Work with Minneapolis Physician Wanted

A graduate of class A school who is in general practice on the outskirts of Minneapolis desires part-time work with a well-established Minneapolis physician. Address 219, care of this office.

For Sale

New Excel Diathermy machine guaranteed perfect condition, all accessories, auto-condensation pad, and table. A real saving for the right man. Also compoboard partitions. Address 213, care of this office.

Fine S. D. Practice in College Town for Sale

I will sell at a moderate price my practice, office outfit, instruments, and medical supplies, introduce my successor, and retire. The best growing educational town in South Dakota. Address 225, care of this office.

Position Wanted

In the Twin Cities for half or full day by a graduate nurse who is a well-trained laboratory and x-ray technician and has had experience with high-grade men. Best of references and moderate salary. Address 215, care of this office.

Technician Wants Laboratory Work

Has had four years experience in large hospital and large clinic, and is now engaged afternoons in Minneapolis. Desires work in forenoons in this city or permanent work outside of city. Best of references. Address 212, care of this office.

Practice for Sale

Practice and office furniture in a South Dakota town of 1,500. One other physician. Practice es-

tablished for 12 years. Price \$300.00, includes new electric sterilizer and complete office furniture. Will yield \$4,500.00 first year. Address 221, care of this office.

Office to Rent

An opportunity is offered to wide-awake progressive young physician to share with surgeon and dentist office suite in central down-town section of Minneapolis, first floor location. Every co-operation will be extended. Attractive terms. Atlantic 0137.

Graduate Nurse Wanted

For general duty, who has had operating-room experience and willing to assist or take charge of the operating-room when called upon to relieve the regular operating-room nurse. Location: Small hospital on Mesaba Range. Address 217, care of this office.

Assistant Physician Wanted

To do general practice, mining contract work, Minnesota. Small hospital. Five other assistants. Must be graduate of Class A college, have had hospital experience, and able to do surgery. Give full information in first letter, with photo. Address 216, care of this office.

Physician Wanted

Physician competent in surgery and gynecology is wanted for partner with a well-established Minnesota physician with small hospital and complete office equipment. Preference given to German-speaking physician with \$2,500.00 to invest. Will prove a real opportunity. Address 220, care of this office.

Practice for Sale

In south eastern South Dakota. Well established, lucrative general practice; unopposed; large territory including two other towns without physicians; good roads; good collections; excellent opening to do surgery; reason for selling, son's health. Practice goes to purchaser of my combined office and residence, price \$3,500; liberal terms; money maker for a qualified man not afraid of work. Address 218, care of this office.

Practice for Sale

A very lucrative unopposed general and surgical practice in a live modern town of 600 in eastern South Dakota. Mixed population. Excellent schools, good roads, good territory, no crop failures, well settled. This is an opportunity to make money from the start. Terms to suit purchaser. No real estate. Address 189, care of this office.

Physician Wanted

At Wolford, Pierce County, North Dakota. Town of about 200 population located in the northeastern part of the state, in a thriving agricultural community. Surrounding territory average about 25 miles to neighboring towns in all directions. Physician will find co-operation and a lucrative practice. For further information write the Farmers State Bank of Wolford, N. D.

THE JOURNAL-⁻LANCET

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THE AMERICAN MEDICAL ASSOCIATION*

BY JOHN M. DODSON, M.D.

Director of the Bureau of Health and Public Instruction of the American Medical Association
CHICAGO, ILLINOIS

I am aware that you wanted to hear Dr. West, the General Manager of the Association, who knows so thoroughly its ideals and activities and speaks so well about them. Unfortunately, Dr. West has been so busy with his duties as Secretary and General Manager that he has been obliged to decline some invitations of this sort and he asked me to come to this meeting.

Those of us who are engaged in the conduct at headquarters of the affairs of the great organization to which we all belong appreciate very much the privilege of coming out in the field and meeting those who are practicing medicine. It is only by keeping in close touch with the men who compose the American Medical Association that it is possible to do those things which are most helpful for all.

Since the addition was made three years ago, the headquarters building in Chicago is a very well equipped and efficient plant. Every member of the American Medical Association ought to take opportunity when he is in or around Chicago to visit that plant, for it is his own. The work of the organization and the arrangement of the building have been described in a small booklet which will be sent to any member requesting it.

Of course, the main activity of the Association in Chicago is the publication of the *Journal of the American Medical Association*, the seven special journals, and *Hygeia*, the magazine of

health for the laity. In addition, many reprints, some books, and various other articles are published—altogether a pretty extensive publishing business. I need not discuss the *Journal* in any detail because it tells its own story. It is the largest, most widely read journal of its type in the world. The special journals are meeting a real need. You may be interested to know that the *Journal of Pathology*, which was established within the last few months, started off with a very satisfactory subscription list and promises to be quite as successful as the other journals. The revenue from the *Journal* and other publications, including the advertising columns, makes it possible for the Association to do certain other things, as you know.

Twenty-two years ago there was established a Council on Medical Education, which is still actively at work. It has been the main factor in the great advance in medical education which has taken place in the last twenty years, an advance unequalled in any other avenue of education. There are some who feel that it has gone a little too far. However that may be, we all rejoice that we can now be proud of the medical schools of the country. Twenty years ago we could not take any such pride. The hospital phase of this Council's work is progressing very well and an enormous amount of information has been gathered, particularly as to the suitability of certain hospitals for interns. This year, for the first time, a list has been secured of the clinical laboratories so that the profession may

*Address before the North Dakota State Medical Association, Minot, May 26, 1926.

have information as to the character of these institutions. Plans are being made to make a survey of the nursing situation. You may know that at the present time the records of the Council are so complete that to-day the career of every young man who enters the practice of medicine is traced from the beginning of his entrance to a medical school to his death. They follow him through his medical course, his internship, his location in practice wherever it may be. The Council has now a real record of the profession.

The second Council to be established was the Council on Pharmacy. The old doctors will remember the time when any pharmacist could put out anything under a trade name and assure the medical man it was a cure for any of the ills that flesh was heir to. As a result of work of the Council a large number of those alleged remedies have been found to be of no value. I asked Dr. Puckner, Secretary of the Council, if he had any message to send to you. He said that there is an undue use of intravenous medication unjustified by our present knowledge. The manufacturers of ampoules and other methods of putting up these intravenous medications are advocating their use. They are not safe and are seldom necessary. Polypharmacy in the line of ductless gland medications is still very prevalent. Needless to say, it is just as illogical to shoot a mess of gland mixtures into an individual as it is to write shot-gun prescriptions of drugs. Dr. Puckner referred to the fact that the search for blood pressure depressants had not as yet found anything that we can safely use. That was emphasized so well this morning by Dr. White that I do not need to refer to it here. We do not know enough about blood pressure to warrant us in using any kind of remedy to bring about its reduction as a mere symptom.

Associated with the Council on Pharmacy is the Bureau of Chemistry, which is doing excellent work helping the Council on Pharmacy on the one hand, and on the other the Bureau of Investigation, formerly known as the Propaganda Department. The director of this Bureau, Dr. Cramp, during the last twenty years has gathered a most valuable collection of information about quacks and patent medicines. Unfortunately, until recently, it was presented only to the medical profession. Now effort is being made to reach the public. The Bureau has a large number of posters (also to be had in the form of lantern slides) that can be sent to any doctor who wishes to talk before women's clubs, Kiwanis, Rotary, or similar organizations, on this impor-

tant subject. A decided impression has been made on the patent medicine business in this country, but the way in which the American public still waste money on things of this sort is appalling, and it will continue until we point out to them the fraudulent character of these nostrums. As Barnum said, "There is a fool born every minute," and when one reviews the patent medicine situation he questions whether Barnum did not underestimate the number.

The Medico-Legal Bureau, presided over by Dr. Woodward, as you have already been informed, has been able to secure a reduction in the Harrison Narcotic Law fee from three dollars to one dollar. The effort to secure a deduction from the income tax for expenses incurred in attending medical meetings and post-graduate work has not been successful. An effort is being made to defeat the extension of the Sheppard-Towner act. There is also a bill pending, which had its origin in the District of Columbia, to give physicians freedom from the restrictions in prescribing alcohol under the Volstead Act. It is felt that these restrictions are not in accord with ethical standards of the medical profession.

The Bureau of Health and Public Instruction over which I have the honor to preside is a continuation of the former Council. When it was organized in 1910 by the House of Delegates there were dumped into its hopper a number of heterogeneous functions, but these have gradually been given up until to-day the function of the Bureau is the one originally planned for it, a bureau for the dissemination of useful and authoritative medical and health information of interest to the laity. There is one phase of the Bureau's work to which I wish to call your attention. The last three presidents of the American Medical Association have each chosen some particular activity to stress. Dr. Pusey made an intensive investigation of the distribution of physicians in this country and pointed out what he felt to be a very serious situation—a dearth of physicians in the rural districts. Dr. Haggard stressed periodic health examinations and made many addresses in various parts of the country both before the profession and the lay public. Dr. Wendell Phillips spoke of these things at Dallas and announced it as his purpose to stress the importance of preventive medicine and particularly the medical and health education of the public. If this is done, if each member of the profession and the whole organization of the American Medical Association will stress this particular thing during one year, it will be inter-

esting to see what can be accomplished. That is the next most important step the profession must take. I do not need to tell you that there is a great deal of ignorance on the part of the public about medical matters. They are more or less addicted to cults, about which I think we worry altogether too much. The remedy for this situation lies in our giving the public the very best service we have. That best service lies largely in the field of the prevention of disease, rather than in its cure. The amazing advance of the medical science of the last half century lies mainly in the field of prevention. The day of mysticism and mystery about medical practice, the day when the doctor dictated to the individual what he must do, without explaining why or how, are gone. If we are to have a betterment of health conditions in this country it must be by the cordial, sympathetic co-operation of the public and the profession on the basis of real information. There are some medical men who do not feel that way. There are some (I believe a small and decreasing minority) who think that the sole business of the doctor is to get sick people well; that he is under no obligation whatever to prevent disease. To my mind a discussion of that point is to-day a purely academic performance. The people are determined to have this information, whether we like it or not, and either we will give it to them or somebody else will. It seems to me that the logical thing to do under these conditions is for the organized profession to devise ways and means of giving authoritative and truthful information about the medical matters to the public and instructing them how to care for themselves.

How can we do that? First, by the printed word, and for that purpose the House of Delegates, as you know, four years ago voted to establish a health magazine, *Hygeia*. I do hope you are all familiar with *Hygeia* and are promoting its circulation. It is meeting a need apparently. The circulation is now in the neighborhood of 45,000 but the physicians are not giving it the wholehearted support it should have. We seek the reprinting of all material in *Hygeia* in as many magazines and newspapers as can be reached, and for that purpose there is prepared a clip-sheet which is sent to any physician who will undertake to urge his local editor to use it for health items. If we send these clip-sheets direct to the editor they almost always go to the waste basket, for, if you have had any experience, you may know that the average editor is burdened with stuff that comes to his desk, and most of it goes to the

waste basket. He will use that which he believes is of interest to his readers and to which his attention is drawn. He knows his public wants material about health. Did you ever stop to think what evidence we have of the widespread interest in health matters? There is not a great metropolitan daily to-day that does not have a health column. There is scarcely a country newspaper that does not have a health column. Every magazine has a health column. *Hygeia* contains articles in reference to diphtheria, scarlet fever, and other similar diseases written in simple language that the public can understand. One of the great difficulties among doctors, seems to be the inability to talk to people in a language they can understand. Not long ago a medical congress was held in a mid-western city. An audience of 2,500, principally laymen, was assembled to hear an address by a well-known medical man. He made a very splendid address *for doctors*, but it went over the heads of the laymen in the audience. They could not understand what he said. We are finding in seeking articles for *Hygeia* that the difficult thing is to get a man who can present the truths of medicine to people, in ordinary, simple English.

The second means of health education is by the spoken word. A speaker's bureau was formerly maintained by the Council on Health and Public Instruction. It was given up during the war, and it has not seemed wise to revive it. What we are seeking to do is to provide material for men like yourselves who wish to make health talks to the public. Few physicians have any adequate conception of the great demand there is for health talks. Dr. Skinner, of Kansas City, told me recently that in that city there is a demand for 1,500 health talks each year. The physicians in Kansas City are giving talks three hundred days a year over the radio. This year they have set up a summer school for doctors to teach them how to give health talks to the laity. Women's clubs, Kiwanis, the Y. M. C. A., churches, and lodges of all sorts are demanding talks. We are trying to provide material which will enable any intelligent physician to instruct the public. What he can best talk about in his particular community he knows better than anybody else, because local conditions largely determine that. Has there been a smallpox epidemic in that vicinity recently, then a splendid opportunity is afforded to talk on vaccination. I recall giving a talk on smallpox and vaccination in a little city in Illinois, some years ago. It turned out that the merchants of that town were keenly in-

terested because the town had been quarantined the summer before, and they lost a lot of customers whom they never got back. Is there diphtheria in the neighborhood? Discuss diphtheria, and what toxin-antitoxin is doing in New York state. They hope to have New York state rid of diphtheria by 1930 by this means. The administration of iodine for goiter is another good topic; and medical inspection of school children or, better yet, of pre-school children. An important work is just now being done by the National Congress of Parent-Teachers, which numbers over a million members. The time to find out whether children have seriously hampering defects, such as those of sight and hearing, bad teeth, tonsils, adenoids, and the like, is before they go to school. The congress offers prizes to the local Parent-Teacher Associations which present the best record in this matter. This means that of the children who are to enter school for the first time this coming autumn, the winning association will be the one which has the largest percentage of such children examined by the family doctor and their remediable defects corrected. Last year 6,000 children were so examined and had defects corrected. This year they have sent out circulars and examination blanks to forty states, and they are expecting to have 35,000 or 40,000 pre-school children taken to the family doctor to be examined, so that these children may not enter school handicapped by defects. In that movement physicians will heartily co-operate.

Of health exhibits I shall not have time to speak at length. You are familiar with one type, the baby welfare exhibit. There are some objectionable features to "Best Baby Prize Contests," but on the whole they have done a great deal of good. They have marked educational value. The health movements that have resulted in such a tremendous advance in the health situation in the last twenty years have been educational movements. The antituberculosis movement in this country has reduced the mortality from 200 to about 80 per 100,000, not by any specific cure for tuberculosis, but by teaching people how to take care of themselves so as to better their own condition and not endanger others.

The Infant Welfare movement is purely an educational activity. Appalled by the terrible mortality of infants under one year of age, we first tried sterilizing, and then pasteurizing, milk; then came stations to supply modified milk, sanitarium, and floating hospitals in hot weather, but they made little headway until

Budin in Paris struck the keynote by taking steps to teach the mother. Infant Welfare stations now scattered over the country are stations for teaching mothers how to take care of their babies. They have reduced the mortality of infants from 175 or 180 to about 70 per 1,000 births.

Health exhibits can be held to advantage in connection with fairs, county or state, and in connection with medical and other meetings. Every state medical society misses a great opportunity when it does not provide such health exhibits for the public. You might have had, at this meeting, such a feature as was provided at Omaha two weeks ago. At the meeting of the Nebraska State Medical Association a moving picture theater was rented and display made of about a half-dozen films of health subjects. The people of Omaha were cordially invited, through the daily papers and in other ways, to attend these "health movies," admittance free, and they responded very generously. That can be done anywhere. It can be done in connection with the meetings of state or county medical societies and in connection with meetings of teachers, merchants' associations, women's clubs, and other groups.

What is the medical profession doing in this matter of the health education of the public? More than you think. Some months ago I sent a questionnaire to the secretary of every county medical society in the United States. This was done by arrangement with Surgeon-General Cummings of Washington, who agreed at the same time to have the health departments interrogated. The first question asked was, "Has your society engaged in any health activities on preventive medicine?" Four hundred and sixty-two said yes; and 483 no. It was asked whether any bulletin or circular was published by the society. The reply, with few exceptions, was no. Another question was, "Do the newspapers of your community publish health items?" Four hundred and five said yes; and 448 no.

"Are you, in North Dakota, seeing to it that your newspapers get health items of the right sort, or do you let the chiropractor, the osteopath, and the Christian Scientist supply this material?" Another question read, "Have you paid for space in newspapers or journals for any health propaganda?" It was a surprise to find that seventy-seven counties had done that, mostly in Texas, at a cost to the Texas Medical Society of more than \$25,000 last year. "Is it necessary?" Many believe it is not. If the public demand this health material, the newspapers will print it of their own accord provided the articles are

written in such style as to be interesting and readily comprehended by the lay reader. Another question read, "Have you used *Hygeia* for lay readers?" Two hundred and forty-four said yes and 620 said no. I should like to ask the members of this society about their interest in *Hygeia*. Have you called attention to it? Is there a copy in the school library? In the city library? A copy on your desk? Has your office attendant made any effort to secure subscriptions?

Another question was asked regarding meetings for lay audiences. In 452 counties such meetings have been held. We asked about the radio. Forty-two county societies said they were using the radio for health talks to the laity. Finally we asked, "Have any steps been taken by your society to promote periodic health examinations of apparently healthy persons?" To this 254 replied in the affirmative.

The periodic examinations of the apparently healthy is a most important movement. Physicians are going to make such examinations because their clients are going to demand it, and they will pay for them, and pay liberally if they obtain value received in a thorough, accurate, comprehensive physical survey, supplemented by sound advice. One of the most important results of these health examinations is that it brings to the doctor's office people who think they are well. The physician can build up in that way a clientele of people whom he is not curing of the stomach or some other ache, but who seeks

to be kept well. They will return to him at regular intervals if they feel he is rendering them a real service.

The most encouraging thing that has taken place in this country in the last decade is what is going on in our schools. During the last ten years there has come a change of attitude of the educational world in reference to health. It is bearing fruit. The school children of this country are thinking in terms of health and they are able to express their thoughts very effectively. They are thinking in terms of *positive* health. Children who are being thus trained in proper health habits and who are getting a sound knowledge of health and all that pertains to it, are going to develop a different attitude toward health from that we have to-day. Twenty years from now, when this generation of high-school children are the men and women of the nation, it will be little trouble to get money to maintain health departments anywhere, rural or city. On reaching the time when health officers, the medical profession, and the people are co-operating together intelligently, sympathetically, and effectively, we shall have a different situation as to health from what we have ever had before.

This is my message, gentlemen: I hope you will engage actively in promoting the medical education of the public. It is the best possible means of strengthening that fine, firm confidence of the layman in the medical profession which has been inspired by the family doctor of all times.

CLINIC ON DISEASES OF THE HEART*

By MERRILL M. MYERS, M.D.

DES MOINES, IOWA

1. The Classification of Cardiac Diagnosis, with Especial Reference to Etiology: White, P. D. and Myers, M.M., American Heart Journal, Vol. 1, No. 1, October, 1925.

In the beginning I shall make a few general remarks about heart disease, especially in reference to the organized attempts directed toward the prevention and relief of such disease throughout the United States. Then I shall present two patients who illustrate a common kind of heart disease, using a new form of classification, and follow this with a short discussion of the prevention and treatment of the rheumatic type.

I.—ORGANIZATIONS FOR THE PREVENTION AND RELIEF OF HEART DISEASE.—The prevention and relief of heart disease is a new problem in public health. Heart disease itself is not new, but the

fact that more people die yearly in the United States from this affection than from any other single cause makes the subject a new one and a vital problem for every person who is interested in maintaining individual and national health. Tuberculosis ranked first as the chief cause of death until recent years, but this position has now been taken by cardiac diseases.

The first organization for the prevention and relief of heart disease was started in New York in 1916, followed by similar associations in Philadelphia, Chicago, Boston, and other cities. In 1924 the American Heart Association was formed and has been actively promoting the work since that time. Recently this association has become affiliated with the National Tuberculosis Association. I commend to your interest the

*Informal clinic presented before the South Dakota State Medical Association, Aberdeen, May 20, 1926.

American Heart Association, for I know it to be keenly interested in the matter of heart disease in rural communities and to be ready to give assistance to physicians in states like South Dakota. The headquarters of the Association are at 370 Seventh Avenue, New York City, New York.

In our own state of Iowa some of us had been interested in the matter for several years, and in 1925 we organized our State Heart Association, the second state association of its kind in the country, the other being Pennsylvania. With a present membership of approximately 300 physicians the Association is enlarging its activities and services. Among its major services is that of clinical conferences in heart disease offered without cost to county medical societies. These clinics have already been conducted in about one-third of the counties of the state. Our State Association has formed an affiliation with the Iowa Tuberculosis Association, permission having been granted to the tuberculosis group by the National Tuberculosis Association.

II.—CLINICAL DISCUSSION.—We shall now proceed to the clinical matters by presenting a Classification of Cardiac Diagnosis,¹ recently published by Doctor Paul D. White, of Boston, and myself, brief copies of which have been placed in your hands.

THE CLASSIFICATION OF CARDIAC DIAGNOSIS

Every complete cardiac diagnosis should always include these three features:

1. Etiology.
2. Structural change.
3. Functional condition of heart.

1. ETIOLOGY

1. Congenital heart disease.
2. Rheumatic heart disease resulting from (1) rheumatic fever; (2) "Growing Pains," (3) chorea; (4) tonsillitis; (5) scarlet fever.

Rheumatic heart disease is *a.* active; *b.* inactive.

3. Bacterial endocarditis, due to invasion by known organisms: (1) pneumococcus; (2) meningococcus; (3) staphylococcus, aureus or albus; (4) streptococcus hemolyticus; (5) influenza bacillus; (6) gonococcus; (7) streptococcus viridans.

4. Diphtheritic heart disease.
5. Syphilitic heart disease and aortitis.
6. Rare infectious types, as with tubercle bacillus and echinococcus.
7. Thyroid heart disease:
 - A. Hyperthyroidism; B. Hypothyroidism.

8. Toxic heart condition, as from metallic poisons and uremia.

9. Hypertensive heart disease the result either of "essential" hypertension or of nephritis.

10. Emphysema heart with special strain on right ventricle.

11. Arteriosclerotic heart disease, or senile heart, or cardiosclerosis.

12. Angina pectoris, the cause of which is yet unknown.

13. Coronary occlusion due to thrombosis or embolism, a distinct clinical entity.

14. The heart in severe anemia.

15. The nervous heart, or cardiac neurosis, or the irritable heart of soldiers. This includes the "effort syndrome" or "neurocirculatory asthenia."

16. Traumatic heart lesions.

17. Cardiac tumors, primary or secondary.

18. Rare etiologic types, such as "athletes heart" (a doubtful entity); the "beer heart"; and the heart in obesity (an uncertain entity).

19. Unknown.

The most common etiologic types are the arteriosclerotic, the hypertensive, the rheumatic, and the nervous.

2. STRUCTURAL CHANGE

1. Myocardial: When the etiologic type is stated the myocardial change associated with the type may be taken for granted although the degree of involvement varies greatly.

2. Endocardial: Changes in the mitral, aortic, tricuspid, or pulmonary valves.

3. Pericardial.

4. Cardiac size and position.

5. Coronary vessels.

6. Cardiac chambers.

7. Septal defects.

8. Great vessels, and other rare congenital defects.

3. FUNCTIONAL CONDITION

1. Heart failure: A. Congestive type; B. Anginal type.

Functional grouping as suggested by the New York Association of Cardiac Clinics:

Class 1. Able to carry on patient's usual activities.

Class 2. Able to carry on diminished activity: A. Slightly decreased; B. Greatly decreased.

Class 3. Unable to carry on any activity (without distress.)

2. Disordered heart action: A. Sinus irregularities; B. Premature contractions; C. Paroxysmal tachycardia; D. Auricular flutter; E. Auric-

ular fibrillation; F. Heart block; G. Atrioventricular rhythm and ventricular escape; H. Pulsus alternans.

To illustrate this classification and to show how satisfactory it proves to be in an analysis of a cardiac patient, the following diagnoses are added:

Case 1.—Rheumatic heart disease (inactive) with mitral stenosis, right ventricular preponderance, auricular fibrillation and failure of the congestive type (able to carry on only greatly diminished activity).

Case 2. Arteriosclerotic and hypertensive heart disease with cardiac enlargement, ventricular premature beats, pulsus alternans, and failure of the anginal type (unable to carry on any activity).

Case 3. Cardiac enlargement and auricular flutter, of unknown causes (able to carry on slightly curtailed activity).

Case 4. Syphilitic heart disease with aortitis, aneurysm of ascending aorta, aortic regurgitation, left ventricular preponderance, and normal rhythm (able to carry on moderately diminished activity).

When you examine a patient with possible heart disease have in your mind such a classification. Determine what is the cause of his heart disease, what pathological changes are present, and never neglect to make an estimate of the ability of the heart muscle to do its work. Such a plan of case analysis will aid you in the matter of accurate diagnosis upon which rests prognosis and treatment. Its employment will in time tend to do away with older and less comprehensive terms which in the past have been given to cover complete diagnoses, such as "mitral stenosis," "enlargement of the heart," "myocarditis," and the like.

Under the heading "Etiology" you find eighteen different forms of heart disease, a formidable list at first glance, but simplified when one realizes that only a few are commonly found; namely, the arteriosclerotic, the hypertensive, the rheumatic, and the nervous. The nervous type is not strictly a true kind of heart disease, but for purposes of completeness it is included in the group. There is not sufficient time to go through the entire list and discuss each form, but I should like to emphasize again that the common forms are the ones of special importance since you are seeing these types continually right here in your community.

As one follows this plan of case study he does not always determine the three features of the diagnosis in the order in which they are given.

Rather, by careful and complete analysis of all of the aspects of the condition one assembles his evidence, and from it decides what points should be included under the three main headings. The etiology in a given case may not be clear until after the structural changes are diagnosed as illustrated by the patients to be presented to-day. For example, your patient is found to have stenosis of the mitral valve; you then know immediately that the mitral stenosis is rheumatic in origin, for in our part of the world the common cause of this valve condition is a rheumatic infection. You see then that in this instance you reversed the order, and only after determining the structural change did you come to a conclusion as to the etiology.

Eight different kinds of structural changes are enumerated. Under "myocardial" it says that "when the etiologic type is stated the myocardial change associated with the type may be taken for granted, although the degree of involvement varies greatly." This means that when you say "rheumatic" heart disease you take for granted that in the myocardium of the auricles and ventricles are to be found the changes characteristic of this disease, chief of which are the nodules of Aschoff. In making such a diagnosis the emphasis should be placed on the word "heart," for in this kind of trouble there is a complete heart involvement, a pancarditis, even though we cannot demonstrate it clinically in all persons.

When one diagnoses "syphilitic" heart disease the very reference to the syphilitic feature leads him to take for granted that the myocardium in that patient contains numerous spirochetes, even though later the pathologist himself may not be able to demonstrate them in all instances. This type of cardiac disease must ever be remembered, for it is probably more widely distributed than is generally believed. The diagnosis of the "hypertensive" type permits one to take for granted that enlargement is a myocardial structural change.

The last portion of the diagnosis deals with the functional condition of the heart, one most important to the patient himself. "How long am I going to live?" is a frequent question asked by patients. The functional condition is expressed by the presence or absence of heart failure (I prefer this term to "loss of compensation"), which is either of the congestive or the anginal form, or both. The former shows itself by edema and dyspnea, and the latter by pain. The functional grouping suggested by the New York workers is of special value in a cardiac clinic. Finally as an expression of function are

given the arrhythmias, to which more attention should be given by physicians. An irregular heart worries the owner of the heart. Now the irregularity may be simple and of no consequence, or it may of itself indicate cardiac disease; therefore you should know these disorders of rhythm in order to tell whether they are significant or not. No book on this subject that I know of is better than that by Thomas Lewis on "The Clinical Disorders of the Heart Beat."

A few sample diagnoses are given at the close of the classification to make clear the method we are using.

CASES AND PRESENTATION OF PATIENTS

CASE 1.—This man is twenty-one years old, a bank teller, is married and has one child, living and well. He complains of tiring easily, slight discomfort in the left front chest, and palpitation. These are not very significant symptoms. At the age of twelve he had an attack of acute polyarthritis, which involved practically all the joints of the extremities, both upper and lower, requiring about two months bed treatment. From twelve to seventeen he had occasional joint pains, but not of a severe nature, but at seventeen there was another attack of rheumatism. His tonsils were removed before he had entirely recovered from the attack, and a recurrence of the joint pains followed. It is probable that a delay of a few weeks before tonsillectomy might have prevented the return of the rheumatic attack. It was at about this time that he was first informed that he had heart trouble, but his condition was satisfactory till last year when he had the last attack of rheumatism. Since that time he has worked every day, though he spends from twelve to fourteen hours of every twenty-four in bed. He has had no chorea or growing pains.

Referring to the classification, it states that rheumatic heart disease results from (1) rheumatic fever; (2) growing pains; (3) chorea; (4) tonsillitis; (5) scarlet fever. When dealing with persons up to the age of thirty-five or forty, if heart disease is present, it will be rheumatic in type in 80 or 90 per cent of instances. This form is the commonest type of heart disease found in children and young people, and rheumatic fever and chorea are the chief causes.

A word about "growing pains." Johnnie grows rapidly, he has some pains in his joints or muscles, but mother and father say, "They are just growing pains, Johnnie, you are growing too fast." But mother and father are probably wrong, for the laddie may at that moment be in the danger zone. These pains are not due to growth; they are due to low-grade arthritis or myositis, and at times they may be the only rheumatic disease obtainable in the history of a patient with frank rheumatic heart disease. I would emphasize the importance of these pains and stress the fact that we as physicians should inform parents and children about their significance.

This man has had no myocardial insufficiency. His heart has been regular in rhythm. He has had no fever. He has been taking digitalis in moderate doses and a tonic. His past history is

negative aside from the points I have mentioned, as are his family, and social history, and laboratory examination of blood and urine.

The examination of the head is negative except for a moderate amount of tonsillar tissue which does not seem to be inflamed. The lungs and abdomen are negative. The blood pressure is 134 systolic, 65 diastolic. You see that he is comfortable, that there is no difficulty in breathing and no cyanosis. The carotids are pulsating more forcibly than they normally do.

The left front of the chest is somewhat more prominent than the right, though there are no undue pulsations. The apex impulse is clearly visible 9 cms. to the left of the midline in the 5th interspace, at which point there is a questionably systolic thrill. The left border is 0.5 cm. beyond the apex impulse, being a little over one-half the mid-clavicular distance. In estimating the size of the heart it is better to measure the length of the clavicle, and if the left heart border extends beyond the mid-clavicular measurement the heart is probably enlarged. We commonly use the nipple line, but this is a variable point.

In recording heart sounds and murmurs I frequently diagram them according to the scheme followed by Richard Cabot in his book on "Physical Diagnosis." This man has a very soft, low-pitched systolic murmur at the apex, where there is also a short, mid-diastolic rumble, which at time lengthens and becomes presystolic. These last two murmurs are proof of mitral stenosis, the former being as pathognomonic as the latter. At the left of the sternum in the second and third interspaces, one hears a definite high-pitched diastolic murmur coming immediately after the second sound.

Stethoscopes: Now a few remarks about stethoscopes. The commonly employed bell-chest piece has its best use in the detection of low-pitched rumbling murmurs of mitral stenosis heard best at the apex. But the bell is not enough, for those who use only this chest piece will miss very important murmurs: namely, the soft, early, high-pitched diastolic murmurs of aortic insufficiency, which are usually heard clearest at the left border of the sternum, a region never to be neglected in cardiac examinations. Because of these facts I always use the two in every examination, and I recommend this plan to you. Doctor Harold Sprague, of Boston, has recently devised a one-piece combination stethoscope which has both the bell and the Bowles chest pieces.

Diagnosis: Our patient then has rheumatic heart disease (inactive), typical mitral stenosis (as indicated by the mid-diastolic and presystolic murmur at the apex). Mitral insufficiency probably accompanies the stenosis. There is aortic insufficiency (as proved by the soft high-pitched diastolic at the left sternal border). There is probably slight enlargement, but no failure and no arrhythmia.

CASE 2.—The next patient is a Scandinavian carpenter, aged thirty-six, who complains of weakness and dyspnea. There is no history of acute rheumatism or other rheumatic disease except a moderate amount of pain in the knees and hips, coming in changeable weather, between the ages of eighteen and twenty-four. He had diphtheria at seven, but no other serious illnesses. In 1916, he was told that he had a disturbance of his heart, but he had no

noticeable symptoms from it. Eighteen months ago his heart became suddenly irregular, producing shortness of breath for a short time. The irregularity has remained ever since, a point which is very important. Three weeks after the onset of the irregularity he was seized with a sudden pain in the left thigh following which the whole limb became numb, and he had to "drag it around" for a short time, but it returned to normal condition in a few hours. Something produced a paresis of his limb. Could it have been due to embolism arising from the heart? It is important to determine this if possible. In 1925 he was awakened at night by a severe pain in the left lumbar region and passed blood in the urine for several days thereafter. Did he have another attack of embolism, this time in the kidney?

Paralyses and parases resulting from embolism in heart disease, whether they result from dislodgment of parts from an inflamed endocardium or whether they are from the liberation of auricular clots, are of less prognostic significance than such troubles arising from hemorrhage or thrombosis. Recovery follows more frequently under the former circumstances.

During the last year the patient has been unable to work regularly. There have been no swelling and no chest discomfort, but slight shortness of breath on exertion and a little fever every day for several weeks. Loss of strength has been pronounced, and he has noticed that his skin has become pale, but has discovered no "spots" on the skin or tenderness of fingers or toes. He has been taking digitalis since June, 1925.

You can see the pallor of the face and hands. The skin is moist and he is perspiring freely. The head is negative except for dirty teeth. There are numerous moist râles at the bases, but none that I hear at the apices. The abdomen, extremities, and skin are negative.

The heart impulse is moderately diffuse about 11.5 cm. to the left of the mid-line in the 5th interspace, but palpation reveals no thrill. The sounds and murmurs are similar to those heard in the preceding patient. At the apex an accentuated first sound, a blowing systolic murmur, a low-pitched mid-diastolic rumble; a soft high-pitched diminishing diastolic murmur at the left sternal border heard less distinctly at the second right interspace. There is a distinct continuous arrhythmia, of which I shall speak later. The blood pressure is difficult to determine accurately, due to the extreme variation in force of beats, but it may be estimated to be 120 systolic and 80 diastolic.

X-ray examination: The roentgenogram (presenting film) was taken after the so-called "seven-foot method." With the patient at six or seven feet from the focal spot of the tube an exposure is made during ordinary respiration, giving a heart shadow of approximately its exact size. The rays at this distance are nearly parallel, while at shorter distances they are divergent and hence produce a heart shadow of less exact proportions. Do not depend on the ordinary close range film for interpretations of heart size. In interpreting a seven-foot film one measures the total transverse diameter of the heart and compares this with the total internal diameter of the chest, and secures the "cardiothoracic ratio," which should not be more than 50 to 52 per cent.

The measurements in this instance give a ratio of 58 per cent plus, indicating enlargement.

Note that the left heart border is convex instead of concave, as it is normally. This condition is found in the rheumatic type of heart disease, the convexity being due to enlargement of the left auricle associated with mitral stenosis.

Electrocardiograms: At this time I should like to show a few slides indicating certain interesting points in electrocardiography. Since such examinations could not be made here I brought some of my own slides. (Presented a series of lantern slides demonstrating the use of the electrocardiograph, and showed a number of tracings including the arrhythmias.)

This patient has auricular fibrillation, a common arrhythmia clinically characterized by a complete irregularity of cardiac contractions, both in rhythm and in force of the beats. It may be easily detected at the bedside simply by feeling the pulse. Electrocardiograms showing this condition are characterized by absence of the normal auricular complexes and irregular occurrence of the ventricular complexes.

Diagnosis: We are dealing here with an advanced state of rheumatic heart disease. The young man we first saw may sometime be in this same condition. The diagnosis is rheumatic heart disease, mitral stenosis and regurgitation, aortic regurgitation, enlargement, slight congestive failure, and auricular fibrillation. But in addition to this may we not be dealing with an infection producing subacute bacterial endocarditis? This is a complication which not infrequently arises in rheumatic heart disease, most often the result of a superimposed infection by the streptococcus viridans (occasionally by the influenza bacillus or the gonococcus.) The symptoms and signs of subacute bacterial endocarditis are loss of strength and weight; pallor; skin manifestations, such as petichiae; embolic phenomena (including tender fingers and toes); palpable spleen; fever; and usually a positive blood culture. This man has not been observed long enough to be sure that this complication is present, but certain features strongly suggest it. It is not generally known that it is a rather common sequel of rheumatic heart disease, giving rise to a grave prognosis, since treatment has been unsuccessful.

III.—PREVENTION OF RHEUMATIC HEART DISEASE

This is a timely subject. Certain observers have produced evidence that the rheumatic diseases are probably communicable. You may yourselves recall where two patients in the same family had rheumatism or chorea at about the same time. It is important, at any rate, that we examine and protect other members of the family when one is found to have rheumatic heart disease, acute rheumatism, or chorea. Since recurrences of rheumatism are the rule patients should be so instructed. The great danger to the patient with a rheumatic heart is infection, and reinfection, even from the simplest cause, for breakdown may come speedily after a simple cold or flareup of the joint pains in a person who may previously have had nor-

mal cardiac muscle reserve. My own plan, in talking to patients about prevention of further trouble, is to place great stress on avoiding infections and less emphasis on over-exertion.

IV.—TREATMENT OF RHEUMATIC HEART DISEASE

I have already indicated the need of preventive therapeutics. Insist on long convalescence, six months may not be too long, for such treatment may be the means of lengthening the life ten or twenty years. Keep the child under observation regularly throughout the rest of its life. Remove diseased tonsils, but be sure to select the proper time for the operation, and, above all, try to maintain full weight and standard nutrition in the patient.

Drug therapy is disappointing. Sodium sali-

cylate, used in daily rations over extended periods, may ultimately be helpful, but it is too early to claim any merits for this drug. Once cardiac rheumatism develops it probably remains in a dormant or active state for a long time, and this conception materially aids in the prognosis and treatment of the condition.

Summary: Heart disease is indeed an immediate problem in public health. Among other phases of the problem there is need of further investigation of the responsible etiologic factors. Rheumatic heart disease is a disease of youth, preventable to a certain degree. I would urge you to give more attention to heart diseases and, as soon as you can, to set up an organization to combat heart disease in South Dakota.

A GOTHIC-MINDED PROFESSION*

BY O. J. HAGEN, M.D., F.A.C.S.

MOORHEAD, MINNESOTA

Suffering humanity creates the demand for Trudeau's ideal physician, "to cure sometimes, to alleviate often, to comfort always." Obviously, the physician satisfies this immediate need, but he knows that his profession carries him beyond the dealing with actualities. He knows that his present activities of effect seeking for cause are a step somewhere on the unwinding ladder of evolution reaching upwards toward reality. To achieve permanent and universal harmony in life processes is one of the most vital purposes of the profession.

Harmony is effected by the perfection of the human machine. Modern science is affirming that individual attitudes and ability to think and act are directly dependent upon physical conditions. It is an established fact that the character of the social structure bears a direct relationship to individual attitudes. There is not time now to go into a lengthy discussion of social psychology; it is enough to recognize that the harmonious qualities of society are dependent upon individual mechanisms, free from discord. Faulty machinery results in friction. Thus, in applying his policy of eliminating frictional agencies, the physician becomes not only an alleviator and a corrector, but a builder of social structure.

In his methods of procedure, shall the physician adopt the art of impressionism or shall he be scientific? In a grand Babbit-like style, shall

he wish to project his personality to carry the crowd with him, appealing to their emotional reaction, at the same time satisfying his own love for publicity, or shall he rather prefer to hold the attitude of a Pasteur, being objective in his dependence upon attention to detail and systematized knowledge?

The cathedrals of the Middle Ages, products of Gothic minds, stand to-day nice monuments of beauty and solidarity in their perfection of detail. Sincere longing for expression inspired their builders, men who achieved self-realization in obedience to the laws of symmetry and design. They knew that no architect building for permanency may build as he chooses, unless he elects to abide by the laws of nature. These Gothic architects were wise to employ skilled workmen, artists who not only were trained in their specialties, but as well were inspired to incorporate in their revealing handiwork the universal longing to reach into the mysteries of the unknown.

During this age all expression sought precision, forcing agreement rather than submission, and elucidating in a biting thirst for truth. Dogma in science, as well as in religion, was challenged. Exact science was in the dawn. The Gothic mind contrived profound perspective in a burning spirit of inquiry and investigation.

Thus, we see to-day cathedrals, manifestations of minds which specialized scientifically to build for permanency; also, we see the concomitant results of scientific discovery remain to be fundamental to research to-day.

*President's Address, presented at the Annual Meeting of the Northern Minnesota Medical Association, held at Crookston, Minn., August 9 and 10, 1926.

Hippocrates, Celsus, and Galen had made their mighty contributions, but God had not exhausted Himself in them. The universities of Bologna, Pisa, and Padua produced Mendinus, Fallopius, Fabricius, Sylvius, Vesalius, Eustachius, and Harvey, efficient in normal anatomy. Harvey discovered the circulation of the blood during his researches as a student of Fabricius. Before him Servetus had described the pulmonary circulation, the same Servetus who engaged in a controversy with the theologians of the day and who at the command of Calvin was burned with all his writings at Geneva, in 1553.

Giordano Bruno, another great scientist of about the same time, dared to think freely of a plurality of worlds. He was burned at Rome. But investigation continued in spite of the persecution by morbid minds. Morgagni and John Hunter produced monumental works on pathological anatomy. They laid the foundations for the next great advance in treatment, that of safe surgery.

Ambrose Paré, who served as medical advisor to four kings of France, is the outstanding medical figure of the Renaissance. He was a self-made and brilliant critic of the methods of the ancients; his mind was fearless, independent, alert and inventive. He became so indispensable that, although he was a Protestant, Charles IX hid him away on the horrible night of St. Bartholomew, saying, that it was not reasonable to murder a man who was worth a whole world of men. Schwann, of Germany, brought out his cellular theory, of which he is the father. In addition he contributed the significant theory that putrefaction of organic substance was due to minute living bodies and that putrefaction and fermentation were essentially one.

Upon this theory Pasteur developed his investigations which resulted in the germ theory of disease, thus establishing on a scientific basis the diagnosis and treatment in modern medicine. The whole science of preventive medicine and immunology, the uses of vaccines and antitoxins are based on his achievements. The control of typhoid fever, of typhus, of diphtheria, and of tetanus is due to his exhaustive researches. Modern surgery is based upon the results of his discoveries.

Permit me to quote Mayo-Robson in a story of the conditions in the hospitals of his time. "In the early seventies it was possible to see hospitals ravaged with hospital gangrene, septicemia, and pyemia when any operation, however simple, might and frequently did assume complications of the most serious import, often ending in death.

For instance, I actually saw death follow the simple tapping of a hydrocele by an eminent surgeon. Ordinary compound fractures often ended in loss of life or limb or took weeks and months to heal. Erysipelas, pyemia, septicemia, and tetanus were never long absent from surgical wards."

Into this tragic condition Lister came, a man well trained in all the science of his day. He had read Pasteur's conclusions that "putrefaction is due to organisms." Seizing upon that idea, he worked out the modern idea of aseptic surgery. Moynihan has said, "If a man's services to humanity are the standard by which we measure his value, then Lister may be counted as perhaps the greatest man the world has ever produced. For he has been the means of abolishing or assuaging the sufferings of men and of women to a degree quite incalculable, and as I said of him years ago, he has been the means of saving more lives than all the wars of all the ages have thrown away."

To these achievements we can add the discoveries of the causes of typhus, yellow fever, malaria, typhoid fever, diphtheria, and the plagues that devastated Europe during the Middle Ages. The more recent researches of Kocher, Plummer, Marine, and Cushing have given us some insight into the meaning of endocrines. The greatest discovery of all in the last twenty-five years is Insulin, by Banting.

These men possess legitimate power for all time; they functioned, not behind a veil, but clearly, working honestly for elucidation. In this manner we might investigate all of the findings available to medical science to-day. We could not fail to find them resulting from the fact that various discoverers determined to know at least one thing well. No doubt they understood their calling to attempt a perfection of the human mechanism, a harmony which can prevail only through the accurate relationships of parts. Not every one may be a discoverer or an inventor, but in reading the legacies of the founders in our profession, in watching the devotion to particular or specific conditions of the modern history makers in the profession, is there not an appeal for all of us to know human conditions exactly in some places, that we may coöperate with other exact informists to achieve complete harmony? Scientific procedure makes for concentrated specialization. So complicated is the human machine that one person cannot hope to completely understand all that it means.

However, under present economic conditions, the general practitioner is a necessity. He is the most useful man in human society. He ought to

be the superman, for he meets not only scientific demands but spiritual needs as well. We point with pride to the spirit which drives the medical missionary into heathen lands, to the Grenfells and the Laizars and the Walter Reeds, and not least, to the pioneer physicians who drove over these prairies in the early days. Laizar gave his life in the experimentation to prove that the mosquito is a transmitter of yellow fever. In Arlington cemetery on an unpretentious shaft of Quincy granite you may read this inscription, "Walter Reed: He gave human control over that dreadful scourge, yellow fever." And so the searching Gothic-minded medical man serves and sacrifices for the permanent construction of a perfect machine.

What Archbishop Ireland said of the church of the Northwest might well be said of the men of our profession, "Behold the stately pine solitary in its towering height. Its fellows that once with it beautified the forest have fallen one by one around it, that the trees of later generations may measure from it to what growth they themselves should aspire."

Let us leave the medical makers of yesterday. Many of them were martyrs who have provided us with traditions of genuine service which must be maintained that the practitioner of today may know freedom to work within his profession. To each one of us comes the personal challenge to meet the responsibility.

Among the almost infinite demands made upon the physician, this challenge presupposes the three requisites to which I invite your consideration with me at this time, namely, personal integrity, professional ability, ethical professional standards.

On first thought we grant to these qualifications obvious interpretations, but knowing the value of confession, let us look in the mirror and see where we belong. Confucius said, "There are only the wise of the highest class, and the stupid of the lowest class, who cannot be changed."

Faith, hope, loyalty, sympathy, and works well done are absolute needs in the good life of the physician. "To live at all is an act of faith: it is an instructive and passionate allegiance to the vitality that will not die and will not face its own extinction." To live requires sacrifices which no other profession understands as does that of the medical man. In our fraternal profession, loyalty is essential to mutual faith. How despicable is the man who betrays one of his brothers or who belittles another's efforts in pratings to the laity. The critical attitude indispensable to progress is not synonymous with a stupid Judas re-

lationship. Rather, how gratifying is the physician who realizes that no achievement is possible in the major art of his life without sincerity, directness and freedom. There can be no freedom within cramped hates and spleens. Freedom within the medical profession exists in sympathetic understanding, coöperation, and trained intelligence to achieve works well done.

One of the most insidious influences, undermining what ought to be the harmonious structure of medical science, is the pretender, the man who is willing to accept short-cut preparation, thus knowingly jeopardizing the patient's welfare. This man usually prates unwarrantably in his own favor. Out of the chaotic conditions of his own mind he prescribes with confusion for conditions which require accurate and precise judgment concurrent with exact knowledge.

Not recognizing the imposter in our profession, patients who fail to receive from him correct diagnosis or successful treatment go to the charlatans outside of the profession. At least their methods of procedure are apparent to the disappointed laity.

The dependable medical man glories in the good life of the physician. He is willing to make sacrifice to the degree of martyrdom because he sees the needs attendant upon the perpetual increase of the sum of human knowledge and the complexity of human problems. With the exactness of ability he increases the efficiency of his profession, and he begets the confidence of patients who intrust to him all that existence means to them, the perpetuation of their human mechanisms. How long is this physician of personal integrity, who is as efficient as present education can make him, going to tolerate this imposter, a leeching cancerous growth in his system? It is a distinct annoyance to his well-being, and it is propitious to the growth of the cults and quacks who thrive on the mistakes within the medical profession, as well as on the superstition and dogma loving natures of unenlightened humanity.

Like the "heathen in his blindness," crowds don't ask, but go, and often they attend their own death ceremonials in the incense of steam-baths and the incantations of the rub doctors.

The cultists, parasites on society, are doomed. The nature of their existence does not make for permanency. Let the scientific thinker hasten their demise. Dr. Morris Fishbein says in the July number of *American Mercury* under the caption, "The End of Eclectism:"

"The only hope for the protection of the public against such dubious cultists lies in having but

one board of medical examiners in each state, and in establishing one minimum standard of qualifications to which every one must measure who is to have the legal right to practice healing. The exemptions of cults because they limit their methods of treatment to manipulation, to mental suggestion, to plant remedies, to highly diluted remedies, or to any other quackery, is merely throwing open the doors to unqualified, incompetent, mendacious, and unprincipled pretenders."

This is the concluding statement of a convincing and enlightening article, the reading of which I commend to each one of you.

An immediate cure for this disease attacking our profession may be seen through legislation. Let us make a determined and unanimous drive to make this legislation final.

Most of us are aware of the thorough and effective work now being carried on with the aid of the public schools by our Medical Public Health Education Department. Their achievements in the building of stronger physical structure will have permanent results.

My final plea is for a far-reaching projection of our Gothic-mindedness. Mindful of the future and the desire for the ultimate good of our profession, let us strengthen the abhorrence of insidious growths burrowing into all social structure by a tremendous will to power within the profession, as well as by a continuous enlightenment of the masses. Let us seek the coöperation of educational agencies, especially the schools beginning with the young, to inculcate a program of moral education which will eliminate fear and superstition, stimulate love of intellectual adventure and intelligent ability, all the while that it instills abhorrence of deceitfulness and malpractice of any nature. When such characteristics are made permanent to the human race, then medical science can more effectively carry on its program of investigation and adjustment for the establishment of equilibrium, individually and socially; then this Gothic-minded profession will have a fit foundation from which to seek out what is good in accurate relationships.

PEDIATRIC CLINIC*

By OLIN W. ROWE, M.D.

The Duluth Clinic

DULUTH, MINNESOTA

Before showing a few slides and as much of this clinical material as time will permit, I wish to thank the officers of this Association for including me in the invitation to take part in your program. The invitation was particularly acceptable for the reason that I was at one time a member of this Association and of the local Society that is entertaining us to-day. One cannot help but feel at home under such conditions.

The slides will illustrate many of the therapeutic measures that we use in the routine practice of pediatrics. I think you will agree that all of the measures demonstrated are easily applicable to general practice even in isolated country districts.

SLIDES

The clinical material has been selected from a large number of patients collected by Dr. Ransom and his associates. It is representative of the type of case brought to the family physician for advice. Rare cases and those requiring a highly specialized technic for diagnosis or

treatment have been excluded. Rather than present an intensive study of one or two cases, I shall show a number, rapidly commenting on one or two phases which will bear some emphasis. Questions at any time on any feature I omit will be welcome.

CASE 1.—K. R., five years old. Brought to Clinic for advice concerning an old discharging sinus below the scapula. The child had pneumonia two years ago and recovered promptly and was discharged. Two weeks later the boy was again taken to the physician who probably found fever, possibly slight dyspnea, and cachexia. There would be a cough and leukocytosis. The physical findings would include displacement of the heart, flatness on percussion, absence of râles and friction sounds and distant bronchial breathing. Between a serous and purulent exudate a positive diagnosis is made only by the use of the exploring needle. This was used and fluid obtained. We do not know the type of organism found, but as the empyema developed after the pneumonia it was probably pneumococcic or staphylococcic. Streptococcic empyema develops coincidentally with the pneumonia. This child had repeated punctures which is excellent treatment. Resection of a rib should never be done until frank pus is obtained. When this stage is reached we can safely assume that the fluid is walled off and that we are operating on a closed abscess. Sufficient

*Presented at the Thirty-Ninth Annual Meeting of the North Dakota State Medical Association, held at Minot, N. D. May 25 and 26, 1926.

time has elapsed to allow any remaining consolidation to completely resolve and the vital capacity to again approach normal. This is essential. The reaction of the child to the withdrawal of the fluid can also be observed. If the empyema is streptococcic or pneumococcic in origin, punctures may be all that is necessary. While I have no data at hand my impression is that nearly a quarter of our cases of these types of infection, some with very large accumulation of pus, are cured by this measure alone. Staphylococcic empyema requires operation in order to eliminate the cavity.

After repeated punctures, two months after the beginning of the attack, the family doctor did a rib resection and put in a tube which was left in six weeks. It was then removed and there has been some drainage ever since. Two possibilities are suggested: either the cavity has not been eliminated, or there is some dead bone remaining. A Roentgen examination with lipoidal and the measures suggested when the slides were shown will complete the diagnosis. The boy needs additional surgery after which the usual post-operative care including heliotherapy, a strict diet and observance of the usual hygienic measures.

CASE 2.—Allen B., aged fifteen months, was brought to the Clinic because he cannot walk. Has a history of convulsions which his mother fears may be repeated. He is slightly constipated. He was considered a normal baby at birth after a rather difficult instrumental delivery. The breast was offered exclusively for one month. The mother failed to regain her usual health after the confinement and was "nervous." The baby had some colic and failed to gain. A complementary, not supplemental, food was offered with excellent results. The mother gained rapidly and was less "nervous" when she saw the progress her baby was making. The milk supply consequently increased, and the baby refused the complementary food. The baby continued to gain for ten months although no other food was offered. Orange juice, which should have been offered very early, cereal, which is handled easily at four months, vegetable purees, which should have been given after the sixth month, were omitted from his diet. Convulsions developed suddenly at eleven months. Although several occurred every day, no other symptom was noted except restlessness and irritability about the time of urination. There was no fever. Repeated urine examinations were negative.

Examination shows a small undersized good-natured boy of fifteen months, unable to walk. He sits with a marked kyphosis. The head is round with bossing of the frontal and parietal bones. The fontanelle is open about as wide as the normal five months. The eyes appear normal but rather widely separated. There is a marked enlargement of the glands in the posterior cervical triangle, at the angle of the jaw and in the axilla and groins. The epitrochlear glands are not palpable. The spleen is about two finger-breadths below the margin of the ribs. There is a marked rosary and enlargement of the epiphyses at the wrists and ankles. Harrison's groove is marked. The sternum is grooved. The legs are bowed. There are only two teeth. The throat is negative. The tendon reflexes are exaggerated, and there is a marked Chvostek and Weiss phenomenon. He has a slight

carpopedal spasm. The dermatitis of the buttocks has the peculiar eaten-out appearance that you expect to find associated with the ammonia odor of the diaper.

Without going on with this examination further we can make a diagnosis of rickets of a severe grade, a marked degree of malnutrition, and an ammonia dermatitis, and we may safely assume that latent tetany exists. These three conditions are largely dependent on faulty diet and poor hygiene. The diet has been poorly proportioned and offered in inadequate amounts.

In prescribing a new diet for this child the same care should be exercised as when writing a prescription for drugs. In addition to the food elements usually considered the accessory food factors must also be kept in mind. Fat-soluble A and water-soluble B have been shown to be necessary to both life and growth. A deficiency in the food factor C will cause scurvy. In addition to these the more recently recognized fat-soluble D is necessary. The fact that cod liver oil will cure rickets is well established. This property of the oil is independent of fat-soluble A since A can be completely destroyed by oxidation and the cod liver oil still remains effective as a cure for rickets. Furthermore, rickets may develop in a child receiving a suitable milk modification containing considerable quantities of A. The very small amount of cod liver oil necessary to cure rickets indicates that rickets is definitely a deficiency disease. Since this factor in cod liver oil is independent of A, B, and C one is led to assume the presence of a fourth accessory food factor D. Neither A, B, nor C is manufactured in the body under any known condition. Sunlight or ultraviolet rays will promptly cure rickets without other change in the diet or method of living. Therefore either the food factor D can be synthesized in the body or sunlight acts directly upon the metabolism in such a way that the factor D is unnecessary. Considered from the standpoint of food factor D, rickets is a dietary deficiency disease. From the standpoint of prevention and cure by sunlight rickets is a disease due to faulty metabolism. Both D and radiant energy serve to maintain the normal salt relations in the body even when the salt intake is not well balanced. In the treatment it is well to keep in mind both possibilities and use not only heliotherapy in the manner described when the slides were shown, but also to prescribe a diet that will furnish all the necessary accessory food factors. Such a diet would have one quart of milk as its basis. This is divided into four equal feedings and should be offered warm. Any well cooked cereal is given as part of two meals. A vegetable is

given once daily. A choice may be made of carrots, spinach, fresh peas, string beans, dried beans, asparagus tips, cauliflower, potato, and tomato. All should be thoroughly cooked and pressed through a sieve. The water should be salted and retained as far as convenient. Orange juice should be offered once daily. Beef juice may be offered now, and as soon as the child tolerates the rest of the diet well, scraped beef should be given. An egg may be offered by the eighteenth month. Cod liver oil is given twice daily. All accepted hygienic laws should be carefully observed.

For a very satisfactory treatment of the ammonia dermatitis we are indebted to Cooke. He found that constipated stools are alkaline in reaction and that such a medium favors the growth of the bacillus ammoniagenes. The organism breaks up urea to form ammonia and when present in the stools or on the clothing leads to a rapid production of ammonia from the urine if the clothing is not promptly changed after becoming wet. The ammonia is of sufficient concentration to produce the characteristic irritation of the buttocks. To prevent the formation of ammonia the mother is directed to wash and dry all clothing and bedding that has been wet with urine and then soak it overnight in a 1:5,000 solution of bichloride of mercury. The clothing can then be used after drying. Simple local applications may be used on the buttocks until the irritation is controlled.

Calcium chloride therapy for the tetany is very efficacious. It is easily controlled by the child's response to the galvanic current. These observations are possible even in isolated districts as sufficient current (5 ma.) is obtainable from dry cell portable instruments.

CASE 3.—Mary P., aged one year; fifth child; birth-weight nine pounds. The complaint is diarrhea. Duration, six days; three to six loose green bowel movements daily. The mother also volunteers the information, but attributes little importance to it, that the baby had the fever for a day or so before the bowels became loose, that the child is very restless, cries most of the time and is rapidly losing weight.

The family and past history is extremely interesting, but has no bearing on the present complaint. The child has been poorly fed in the past, but was on a reasonable diet for a period of approximately three weeks before the beginning of the present trouble. There was no history of indiscretion in diet immediately preceding the attack.

Examination: A markedly undernourished baby, obviously quite ill and in considerable distress. The mouth is open. The skin is gray except for slight flush on the cheeks. It is dry and cold and shows some decrease in elasticity. The abdomen is doughy. The turgor is poor. The eyes are somewhat sunken,

and the fontanelle is slightly depressed. You notice some slight resistance to my attempts to tip the head forward. There are enlarged lymphatic glands at the angle of the jaw and posterior cervical triangle, most marked on the left side. Almost all of the evidences of rickets described in the last case are present in this baby. The throat is acutely inflamed. The right ear drum has lost its light reflex, and the left ear drum is red and bulging.

Diarrhea as a complaint is much more frequently met with in infants than in adults. This is due to the fact that the digestive system is always working to nearly its functional capacity. Any untoward condition which reduces the resistance of the child and especially those which lower the function of digestion and absorption may lead to an accumulation of food in the intestine, which is readily broken up by the organism present with the formation of irritative products. When diarrhea is established, the child usually cuts down its food, and as metabolism proceeds at approximately the normal rate, a considerable destruction of body tissues results. Water and the mineral salts may be lost very rapidly if the condition is not checked, and serious results may ensue. Laxatives, if given, may cause irreparable damage.

The most frequent causes of diarrhea in babies during the cool months of the year are parenteral infections. As a reasonable diet was offered at the time the baby became ill, underfeeding or overfeeding including dietetic indiscretions may be ruled out as the cause of diarrhea in this case. Had the diarrhea developed during the hot weather, if an epidemic of dysentery existed, if the symptoms referable to the digestive tract were much more acute and if the usual history, including the giving of unsuitable foods, had been present, a diarrhea due to enteral infections might have to be considered. In any case a careful examination of the baby is demanded. The examination here reveals the throat and ears as the source of the parenteral infection. This is accompanied with a definite degree of dehydration.

The treatment of diarrhea due to parenteral infection demands the removal of the infection and the prescribing of a diet which meets the child's requirements for nutrition. No modification of the diet will control the diarrhea until the cause is removed. The focus of infection can be easily attacked in this particular child. The bulging ear drum should be opened. The right ear should be carefully watched. Cold packs should be applied to the throat. Antiseptics should be used in the nose and throat. Hydrotherapy with possibly some other simple measures will control the fever and restlessness. The dehydration will be easily controlled by the giving of water. At least one and one-half quarts should be given during the remainder of the day. After the water has been started, the usual diet for a normal child of this age and weight can be offered. Only small portions will be accepted at first, but these will be rapidly increased after a few hours. The rickets and malnutrition should be treated as in the preceding case.

CASE 4.—Mary W., aged four and one-half years. First child. Birth-weight, five and one-half pounds. Delivery, tedious. Child said to be slightly blue at birth. One younger child entirely normal.

The mother presents this child with the statement that it has "heart trouble." It is to be regret-

ted that we can find no reason to quarrel with her diagnosis. The difficulty was first described to the mother when she presented her child, then aged six months, to a baby clinic for examination.

Past illness: Pain and discomfort during the second year that was first thought to be colic, but after a few days was found to be an acute suppurative otitis media. Measles, at two and one-half years. Baby not quite so well since.

Examination: An undernourished child with a distinct degree of cyanosis. No evidence of rickets. The tonsils appear normal, and there are no enlarged glands at the angle of the jaw. Geographic tongue. There is a loud systolic murmur heard best at the base and diffused all over the chest. The heart is enlarged to the right. There is no thrill.

The interest here lies, not in an accurate diagnosis of the heart lesion, but, rather, in the differentiation between congenital and acquired heart disease.

The child was blue at birth. A heart lesion was known to exist as early as the sixth month. The heart is enlarged to the right; the murmur is heard best at the base without any characteristic transmission. The baby is cyanotic. This is sufficient evidence upon which to base a diagnosis of a congenital anomaly. That there was no history of infection until after the heart condition was recognized strengthens this opinion. If clubbing of the fingers also existed, no possible doubt could remain. The lesion is probably congenital pulmonic stenosis. When the lesion is as definite as it is in this particular child it is almost always combined with other changes, most frequently by a defect of one or both septa or by a patent ductus arteriosus. The prognosis is bad in direct ratio to the degree of cyanosis. The child has already passed through two infections. The mother has noticed that the child is not doing too well since the measles. Certainly other infections are to be avoided. Should the child reach the sixth or seventh year some compensatory changes may develop.

Treatment: There is no treatment of the slightest avail in diminishing the stenosis or promoting the control of abnormal openings in the septa. Measures to promote the general health of the child, avoidance of infection, and symptomatic treatment of cardiac accidents are all we can offer. The fact that these lesions are comparatively infrequent and that they practically always occur in the first-born, may be of some comfort to the mother.

CASE 5.—Leonard S., aged three and one-half years. Complaint:—colds, one or two a month; (2) underweight; (3) rash, which itches, particularly at night.

On further inquiry the mother states that the child snores at night, is tired on awakening in the morning, has a poor appetite, and is not as active as her other children.

The family and past history, except for frequent "colds," has no bearing on the present complaints.

Examination: A poorly developed child about 20 per cent underweight. Mouth open. Large lymphatic glands in posterior cervical triangle and at angles of the jaw. The skin lesions are all below the chin line and most numerous upon the hands, in the axilla and on the lower abdomen.

There are some between the fingers and on the inside of the thighs. The lesions consist of papules, vesicles, excoriations frequently infected and small pustules. The tonsils are dark red, covered with mucus. They are not large, about two plus in a scale of four, but have a very small drainage surface. This surface is cauliflower like and has a few dilated blood vessels. Except for enlarged glands in axilla and groin, the remainder of the examination is negative.

A diagnosis of scabies is easily arrived at from the distribution and multiformity of the lesions. The mother also admits that other members of the family have a similar rash. Burrows, if the light permitted of careful inspection, could be found and are diagnostic.

The frequent colds are due to hypertrophied, diseased tonsils and adenoids. The malnutrition in the absence of other pathologic conditions can be considered secondary to the upper respiratory tract infection.

Treatment: Sulphur ointment still holds its reputation in the treatment of scabies. The method of application following the initial bath, the number and frequency of the applications, the terminal bath and the care of the clothing and bedding should be carefully explained to the mother. You may emphasize the fact that if this is thoroughly done that one such course will suffice. In young children a dermatitis occasionally follows the treatment but is easily controlled.

After all evidence of the present subacute inflammation of the throat subsides the tonsils should be removed. The reasons are as follows: positive knowledge of the present inflammation, history of frequent similar attacks, obvious chronically diseased tonsils with poor drainage surfaces, cervical adenitis, obstruction to free respiration, and malnutrition. Following the immediate post-operative treatment the child should be put upon a strict hygienic régime, proper diet, and heliotherapy.

CASE 6.—Murray S., aged five months. Birth-weight, nine and one-half pounds. Considered normal at birth. Offered breast for two months, then discontinued because "he didn't care for it." Present food: whole milk twenty-four ounces, water twelve ounces, granulated sugar two tablespoonsful. Of this give six ounces every three hours six times daily. Never takes quite all the food offered. No water given except that in formula.

Complaint: No gain in weight. Constipated.

Examination: Weight nine pounds and ten ounces (a gain of two ounces in five months). Large frame; very thin; color fair; abdomen retracted; the fontanelle depressed; sutures prominent; eyes bright; practically no buttocks; skin dry with fair elasticity; marked rosary and Harrison's groove; stools said to be passed with difficulty and are described as gray marbles.

Diagnosis: A moderate degree of athrepsia with some dehydration and rickets.

Treatment: The minimum maintenance requirements of this child are in the neighborhood of 700 calories. If breast milk were available in large amounts (breast milk equals 700 calories per quart) it would be the food of choice. To secure this amount of breast milk, the mother says would be impossible. For reasons first described by Marriot and outlined when we were discussing milk formulæ, a whole lactic milk will be tolerated well by

this boy. The amount of milk used need not be changed from that offered at present. Commercial corn syrup is the carbohydrate prescribed. Children tolerate a mixed sugar much better than saccharose alone. The ordinary commercial corn syrup on the market is composed of dextrin, 55 per cent; maltose, 25 per cent; glucose, 15 per cent; and cane sugar, 5 per cent. It therefore meets our requirements. At least four tablespoonfuls should be offered now. The amount of water in the formula is immaterial, but as the child refuses to take six ounces of food every three hours, it will be well to keep the volume of the whole feeding down as low as possible. As the syrup is sticky and not easily missable with milk, handling will be facilitated if added to an equal volume of hot water before adding to the milk. The formula should then be divided into six bottles equally, and one portion offered every four hours. As the feeding intervals are longer and the amount of food offered at a time is smaller, little difficulty will be experienced in giving the child the entire amount. This will furnish the child with approximately 740 calories, or only a trifle more than 100 calories per kilo of body-weight. The formula, therefore, must be stepped up rapidly to approximately 150 calories per kilo. In the meantime starch, which does not ferment readily in the intestinal tract, will be a valuable addition to this diet. Starch seems to influence nutrition favorably for some reason not explained on the basis of its caloric value alone. Barley gruel seems to have some advantage over some other cereals, but probably wheat or oatmeal will be better here. Water must be given in large amounts until the fluid balance is restored. A quantity of water almost as great as the food offered can be given between meals. The dehydration is not sufficiently serious to demand the administration of fluids parenterally. Orange juice, cod liver oil, and heliotherapy will complete our therapeutic measures. The prognosis is excellent if infections are avoided.

CASE 7.—Jack, aged eleven months; breast fed for ten months. The family and past history have no bearing on the present complaint.

Complaint: Constipation. No bowel movement without assistance since weaning. Enemas, laxatives, and mineral oil are used daily. Occasionally all three are used on the same day. Present diet, one quart of milk daily to which a small amount of cream is added. One teaspoonful of cereal was offered once, and an equal amount of vegetable on another occasion. No results were observed, so these were discontinued.

Examination: Large, well-nourished baby, well developed. Turgor, fair. Slight head sweating and possible slight enlargement of costal chondral articulations. The remainder of the examination is negative. Stools are hard, gray masses which are evidently the insoluble soaps of calcium and magnesium. The constipation of this child is the result of several factors: First, the type of food offered furnishes an insufficient stimulus to peristalsis. The residue from one quart of milk is sufficient bulk to produce some stimulation. Easily fermentable carbohydrates, the normal peristaltic stimulant, are, however, lacking. Second, one quart of milk with an indefinite amount of cream contains a large amount of fat and considerable casein. This will result in the formation of insoluble calcium and magnesium soaps. These soaps accumulate in hard, gray masses, which are exceedingly difficult to pass. Third, the use of laxatives and enemas over-stimulates and even irritates the bowel. If continued a greater stimulant than the normal will be required to produce the desired response. Freedom from laxatives will enable the bowel to return to its normal condition.

Treatment: This should be prescribed with the object of counteracting all three factors mentioned. By reducing the amount of milk and omitting the added cream the amount of fat and casein is reduced. A carbohydrate should be added. Commercial corn syrup or, if necessary, a combination of it and a carbohydrate containing a larger proportion of maltose, should be added. A leafy vegetable is given once daily, and a cereal, either oats or rye, is given twice daily. This will furnish sufficient bulk and contains enough carbohydrate with the reduced amounts of fat and casein to prevent the formation of hard masses in the bowel. All laxatives will be omitted. Orange juice should be given, but not because of any laxative properties which are frequently attributed to it. Cod liver oil and heliotherapy are offered to prevent further development of rickets. The habit of having a stool at a definite hour should be cultivated. This is best secured immediately after the first heavy meal in the morning in order that the normal peristaltic wave starting with the ingestion of food, may be utilized. In helping the child to form this habit when placed upon a suitable toilet, the occasional use of a suppository, enema, or oiled glass rod may be necessary. In this case mineral oil, agar, atropine, etc. will be unnecessary. The habit of a regular defecation when well established is as difficult to break as some of our less desirable habits.

HEAD INJURIES*

By J. N. WARREN, M.D., F.A.C.S.

SIOUX CITY, IOWA

Injuries to the head constitute a serious chapter in industrial surgery. The more serious injuries

are easily diagnosed. Those that are apparently minor often prove to be the most difficult, and may mislead the attending surgeon. The anatomical structure injured, the character of the in-

*Presented before the Great Northern Railway Surgeons Association at Glacier Park, Montana, June 25, 1925.

strument, the momentum of the body causing the trauma, and the physical condition of the patient should be carefully recorded. The exact spot on the head should be specified. The sequence of events which may follow may be surprising and dangerous to the life of the patient.

Anatomically we have the superficial soft parts, the skull and the intracranial contents. On account of contusion of the scalp or separation of the muscles attached to the head, palpation may be misleading as to the bony pathology present. The x-ray may show the bony injury, but it gives us no information of the character or the extent of the pathology underlying. Recent literature displays much difference in opinion as to the pathology present and the plan of management. Pathologists state that the most frequent cause of death in patients with fractures is traumatic edema. Dr. John Fox Connors says: "Based upon the autopsy findings in more than one thousand cases of head injuries, its existence as a pathological surgical entity is yet to be demonstrated. Edema of the brain should produce head swelling, which, in turn, should cause flattening of the convolutions and narrowing of the sulci." I believe this statement not decisive. Edema of the brain causes a forcing out of the cerebrospinal fluid, then emptying of blood in the veins, and finally of the blood in the capillaries, arterioles, and arteries. With this displacing of the fluids of the brain tissues, the possibility of compression of the convolutions is not probable.

The classification of intracranial injuries is as follows:

1. Concussion.
2. Contusion.
3. Laceration.
4. Laceration of meningeal artery.

A contrecoup laceration of the brain differs only in the manner of cause. Drs. Rodman and Neubauer have adopted the following groups:

- Group 1. No increase in intracranial tension.
- Group 2. Moderate increase in intracranial tension.
- Group 3. Marked increase in intracranial tension.

In determining into which group the patient falls, after surgical shock has been passed, we depend upon the following points:

1. General examination including neurological findings.
2. Observation of the temperature, pulse, respiration, and blood pressure every four hours.
3. X-ray of the skull.

4. Spinal puncture estimating pressure by means of the spinal manometer.

The simplicity of this classification is favorable. All may be with or without fracture.

CONCUSSION OF THE BRAIN

This class of cases leads to much confusion in the mind of the general practitioner. Many cases of head injury are not thought serious on account of the local condition found and are pronounced concussion of the brain needing no special care. It is classified as temporary disturbance in the fluids of the brain, which is soon corrected. The border line between concussion and contusion is difficult to establish. In true concussion we have no anatomical changes. The patient should be kept quiet in bed with care of the general condition. The stupor tends to subside. If serious heart weakness and lowered blood pressure develop, it is perhaps due to an inhibitory effect of the traumatism upon the basilar centers and should be treated as shock. In the serious cases with slow pulse, increasing coma with disturbance of the blood channels of the eye, operation is indicated or conservative treatment by dehydration.

In extradural and subdural hemorrhage the clinical picture is definite. The coma is progressive with neurologic symptoms often present. The condition is caused mechanically. The probable seat of the hemorrhage is determined and a trephine opening made and the clot removed with ligation of the bleeding vessel. The possibility of a contrecoup must be remembered. Hemorrhage occurring within the cranium from traumatism is often subdural. The hemorrhage is usually basilar. If no localizing symptoms are present, venous stasis in the eye-ground will point to the side involved. When uncertain, the place to operate is low in the right temporal fossa. There may be hemorrhage into the subarachnoid space or into the brain tissue.

LaCount and Apfelbach, in a study of 504 cases of skull fractures, found that 85 per cent had a simple linear fracture, that 94 per cent of the brains at operation or at postmortem showed laceration or contusion. This shows the importance of a special examination as these cases will have symptoms of interference with circulation in the medulla. We must realize the pathologic physiology in the early or antemortem changes. This fact is emphasized by Dr. Bower. Any trauma causing an interference with cerebral nutrition may at last produce bulbar anemia.

In a study of brain injury cases the following method is selected:

BLOOD PRESSURE

Dr. Bower states that a systolic pressure of 160 and a diastolic of 100, which within an hour or within a few minutes may show a drop to a systolic of 120 and a diastolic of 50, shows that the patient needs prompt operative interference to be saved. The cerebrospinal pressure will be taken in a lateral prone position, from the second lumbar space with a three-way stop-cock instrument. The normal pressure is from 7 to 11 mm. of mercury. A registration higher should be carefully watched. These observations are taken with the spinal manometer. The eye changes and the character of the pulse and respiration should be noted. The usual symptoms of shock are recorded. In the compensating patient, a slow full pulse and deep respiratory movement are present. The Cheyne-Stokes' respiration is present in the non-compensating. A weak rapid pulse is present in shock.

TREATMENT OF HEAD INJURIES

Treatment of head injuries should be—

1. Management of the shock.
2. In concussion, rest in bed and close observation, as the more serious cases may develop symptoms of compression.
3. Contusion of the brain may show mild compression symptoms and should be treated by rest and dehydration with magnesia sulphate. The conservative treatment of this class of cases is now adopted by the best authorities.
4. In laceration of the brain we also have contusion. They are always associated with edema, and the pressure symptoms may be so pronounced as to demand immediate operation.

Extradural hemorrhage is easily diagnosed and the treatment is operation for removal of the clot and arrest of hemorrhage. The presence or absence of fracture is immaterial.

My purpose has been to show that minor cases should be watched and border-line cases given investigation with proper treatment instituted.

BOOK NOTICES

PHYSICAL DIAGNOSIS OF DISEASES OF THE CHEST. By Joseph H. Pratt, A.M., M.D., and George E. Bushnell, Ph.D., M.D. Octavo of 522 pages with 166 illustrations. Philadelphia and London: W. B. Saunders Company, 1925. Cloth, \$5.00, net.

This book is written by two physicians with many years experience. Colonel George E. Bushnell prepared the section on diseases of the lungs. One is convinced of his qualifications for such work upon learning that he himself developed tuberculosis dur-

ing the period of the Spanish-American War and devoted the remainder of his life to tuberculosis work. During the World War it was Bushnell who was placed in charge of the tuberculosis work for the American forces, although he had already reached the retirement age.

In training men for chest work in the army he quickly saw that most physicians knew very little about the physical findings of the normal chest; therefore his first attempt was to teach them such findings and later introduce findings of the diseased chest. When the war was over he began working in collaboration with Dr. Pratt on this book. His part was finished in July, 1923, and the book was published in 1925, after Colonel Bushnell's death. In this section on the lungs Dr. Bushnell gives much valuable information, not only from the literature of the world, but also from his own experiences through many years of successful practice. Realizing the importance of physical findings over the normal chest he emphasizes these findings before proceeding to the findings over the chest in various diseases.

Most physicians know of the splendid work which Dr. Pratt has done for many years in diseases of the heart. Indeed he has followed individual cases over long periods of time, making careful observations and analyses of his data. He also has pointed out the importance of the knowledge of the findings over the normal heart before proceeding to the diseased heart.

With many years of experience these two very successful practitioners were able to prepare a book which is of extreme value to both the medical student and the practitioner of medicine.

—J. A. MYERS, M.D.

NON-SURGICAL DRAINAGE OF THE GALL TRACT. A Treatise Concerned With the Diagnosis and Treatment of Certain Diseases of the Biliary and Allied Systems, in Their Relation to Gastro-Enterology and General Clinical Medicine. By B. B. Vincent Lyon, A.B., M.D., Chief of Clinic, Gastro-Intestinal Department of the Jefferson Hospital. Cloth, price \$10. Pp. 640, with 185 illustrations. Philadelphia: Lea & Febiger, 1923.

This book is interesting and easy to read, and at the same time opens up to the reader a new field, which is a definite advance in medical therapeutics. The book is thorough, taking up the embryology, anatomy, and physiology of the digestive system.

One chapter is taken up in the answering of his critics, which he does well.

Diagnosis is given a large part, and a thorough examination is especially emphasized. A number of charts used by the author in making diagnosis are printed, which facilitate and save time in analyzing the case.

Other chapters describe laboratory tests and the x-ray. The method of gall tract drainage is fully described and detailed. The reader is shown how the material is examined, what may be learned from it, and how the diagnosis is made from the information obtained.

The book closes with a number of interesting and instructive case-reports, and the volume is well illustrated with diagrams, charts and photographs. Every progressive physician should read this book.

—A. N. BESSESEN, JR., M.D.

THE JOURNAL-LANCET

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INTRACRANIAL BIRTH INJURIES

The science of obstetrics has reached a very high mark because there are men who are trained in real obstetric work and have many opportunities to see unusual cases. And one is led to wonder how many cases of brain injury there may be through abnormal births? It has been found that the cranial stress depends upon two main factors: the outside pressure to which the intracranial cortex is subjected and the degree of congestion of the cerebral veins and dural sinuses. But when one considers, too, the difficulties that are encountered in nature's efforts to bring forth there should be no surprise that the possibilities of a foundation are being laid for future brain disorders, that the pressure from above, that is, the pressure internally, may be so exaggerated that the frail tissues of the fetus may be subjected to many injuries which appear only later in life. And perhaps this will explain a number of hemorrhages and tears in the vessels of the brain, as well as in the partitions. Baker, in an article in the *Journal of Obstetrics and Gynecology of the British Empire*, suggests that tears of the tentorium are a sign, not so much that undue force has been exerted on the head, as that it has been exerted in the wrong diameter; namely, the occipital-frontal. That this type of force is injurious to the contents of the skull is shown by the fact that the

majority of fetal intracranial stress cases show lesions of the tentorium.

The author also suggests that full flexion of the head in the application of forceps and in breech deliveries, apart from involving a smaller diameter of the head and thus aiding delivery, would prevent many cases of tearing of the membrane.

In the light of these events why is it not probable that the effects of injuries of a slight nature during delivery may be held in suspension until some other injury to the head occurs. For instance, a man or a woman who perhaps has come through a difficult labor at the obstetric period afterwards receives an injury to the head and this injury lights up an old quiescent lesion and starts a train of symptoms that are very difficult to analyze, but which mean much to the individual. Blows that would ordinarily be received without protest may often lead to serious consequences because the individual has a predisposition to injuries acquired through the faulty mechanism of birth.

We think any surgeon can recall frequent cases he has seen that have suffered minor head injuries and yet have developed into great disorders. At least this proposition seems to us to be worth consideration. We are constantly led to believe, or at least we discuss, an early injury in childbirth, which, if under careful scrutiny will resolve itself into nothing of importance and yet bearing in mind the possible intracranial injuries, these so-called minor accidents may produce astounding after-results.

MINNEAPOLIS AS A MEDICAL CENTER

In connection with other medical centers in the Northwest Minneapolis is admitted to hold a high place, and this is largely on account of the University Medical School, which is known over the entire United States because of its large numbers of students drawn largely by the access that the students have to clinical instruction.

The Medical School has a large dispensary, from which it draws a definite amount of material. It also has the University Hospital, which is filled with patients from the city and all parts of the state. It has exceptional resources in its separate hospital buildings.

First, there is the general building, which contains the surgical quarters of the staff, and the medical centers which occupy a correspondingly large space. Then, too, there is a special building which is known as the Cancer Hospital for the care and treatment of cancer patients. This is under the direction of Dr. Arthur C.

Strachauer, who is designated as the one to whom these cancer cases are referred both for examination, for diagnosis, and treatment. This naturally attracts a number of people from different parts of the country as well as from the Twin Cities and the state because it not only permits people who cannot pay to enter, but it also admits a certain number of pay-patients. The result is that a great variety of cancer material can be presented to the students. The Hospital now has a large supply of radium with which it will operate directly or indirectly with the surgeon.

Adjoining this and as part of the building is the Todd Memorial Hospital for eye, ear, nose, and throat cases. This is under the care of the faculty Department of Ophthalmology and its allied branches.

Then, too, in conjunction with the clinical teaching of the University Medical School and the University Hospital there is associated the General Hospital of Minneapolis to which students have free access and where much of the teaching of the medical, surgical, and other branches is done. The General Hospital has between 600 and 700 beds with its associated hospitals, and offers a tremendous amount of material for the students. The Ancker Hospital in St. Paul is in a like position with that of the General Hospital of Minneapolis in that teaching is done there, and students are assigned definite times and definite studies at stated periods.

The faculty of the University Hospital is connected with most of the other Twin City hospitals, either general or sectarian: St. Mary's Hospital with its large building with 250 beds; the Northwestern Hospital, which is just completing its new wing for 125 additional beds; the Swedish Hospital, which has a large number of beds; Fairview Hospital, which is in the immediate neighborhood of St. Mary's, and the staff of which is made up of prominent medical men of the city, is a large, new and commodious hospital; the old Asbury Hospital, which is now occupied by the Government in the care of its tuberculous soldiers; and the new and modern Asbury, which is only a block from the old building, is an up-to-date and finely equipped institution with 125 beds; and Abbott Hospital and its Children's Clinic Building with 125 beds, and which is to have an additional building within a year, is available for teaching purposes, and its staff is composed of leading medical and surgical men of Minneapolis.

Then, too, the Hospital for Crippled Children,

which was instituted by the Shriners, and the newer hospitals which will be built from the Eustis Fund will be under the direction of the University and the medical staff.

These buildings are more or less scattered, but they are all available for clinical material at any time. This hospital work is in the making and will eventually attract a large clientele from many states. So generously endowed as it has been by Mr. Eustis it cannot help but add to the clinical facilities of Minneapolis.

Then there are many smaller hospitals in the city with a small number of beds and all under the direction or supervision of medical men of the staff.

Minneapolis may well be proud of its Hennepin County Medical Society with its membership of over 520 physicians, the largest county society between Chicago and San Francisco. Within it are component societies largely made up of the different specialties in medicine. It co-operates in the University short courses which have been a very marked feature throughout the Northwest; that is, medical men come to Minneapolis and register at the University for short courses which last a few days or two weeks, and the attendance is gradually increasing in numbers.

Minneapolis also has a number of clinical group centers, all of which seem to be prosperous and all of which are ethically conducted.

The new municipal auditorium which is nearing completion and will be ready for occupancy in June, 1927, is likely to attract a large number of conventions and among those which are especially allied to Minneapolis as a medical center is the meeting of the American Medical Association. The building and its surrounding buildings will be able to take care of the A. M. A. meeting whatever its number may be. In Dallas, Texas, in 1926, there were about 4,200 men registered from various parts of the country. In Chicago, when it meets there, they have over 7,000 present, and in Atlantic City a similar number. Minneapolis is able to take care of this number without confusion or being top-heavy. Fortunately, there are buildings within one or two blocks of the auditorium that can house sections which need considerable space, and provision is already being made for the establishment of centers within a very limited radius for the accommodation of almost any meeting. Whether the A. M. A. comes here or not depends on the activity of the Hennepin County Medical Society, and if they really want the Association here they should all boost for it individually and in groups.

NEWS ITEMS

Dr. J. W. Campbell has moved from Fargo, N. D., to Detroit, Minn.

Dr. A. F. E. Schierbaum has moved from Beach, N. D., to Mt. Angel, Oregon.

Dr. A. H. Movius, of Jamestown, N. D. was killed in an airplane accident last week.

Dr. R. J. McAdory, who has been in Government service for some time, has located at Vernon Center.

Dr. A. W. Swenson who has been practicing for some years in Bisbee, N. D., has moved to Van Nuys, Calif.

Dr. A. R. Sorenson has moved from Rugby, N. D., where he had practiced about fifteen years, to Minot, N. D.

St. Joseph's Hospital of Minot, N. D., will add another wing to its building. The necessary funds for the work are being solicited.

Dr. E. M. McLaughlin, of Winona, sails this week for East Africa, where he goes, accompanied by his wife, to shoot big game.

Dr. William M. deVries, Professor of Pathology, University of Amsterdam, visited the Mayo Clinic for two days during the week of October 3.

Dr. W. B. McMurtrie, formerly of Hutchinson, has recently opened offices at 4012 Minnehaha Ave., Minneapolis, for the practice of medicine.

Dr. G. P. Dunne, of St. Paul, went to Montreal last month to attend the McGill Medical School reunion. He also visited New York and Chicago clinics.

Twenty-nine new Fellows were admitted to The Mayo Foundation for the quarter beginning October 4, 1926. Sixteen of these Fellows will major in surgery.

The Southern Minnesota Medical Association holds its annual meeting at Mankato on October 18, instead of at Winona, as erroneously stated in our last issue.

Dr. Karl J. Fauth has located at Gaylord. Dr. Fauth is a recent graduate of the University of Iowa, who took his internship at St. Barnabas Hospital, Minneapolis.

The eighth annual meeting of the Resident and Ex-Resident Physicians of the Mayo Clinic was held last week at Rochester. Physicians from all parts of the country were present.

Dr. George E. Mills, of Minneapolis, died last month at the age of 47. Dr. Mills graduated from a Kentucky medical school and had practiced in Minneapolis over twenty years.

The citizens of Valley City, N. D., feel confident that the Sisters of Mercy will establish a hospital in that city, toward the building of which the citizens will contribute \$50,000.

Dr. P. J. Weyrens, of Sheldon, N. D., has gone to Chicago to do postgraduate work for three months. During his absence his practice will be taken care of by Dr. W. L. Barbour, of Kulm.

The enrollment in the School for Nurses at the University of Minnesota has jumped from 157 a year ago to 393 this year. There are 345 women registered in the division of home economics.

At the September meeting of the Watertown (S. D.) District Medical Society, Dr. R. E. Woodworth, Supt. of the State Tuberculosis Sanatorium, spoke on the latest and best method of treatment of tuberculosis.

The citizens of Rush City and the country folk for miles around gave Dr. A. J. Stowe, their beloved physician who is retiring from practice at the age of 68, a reception last month that was exceedingly hearty.

Dr. D. F. Robbins, a graduate of the University of Illinois, School of Medicine, class of '14, who was roentgenologist at St. Barnabas Hospital, Minneapolis, for a year and was in service for a year, has located in Lake Wilson.

The annual banquet of the Hennepin County Medical Society will be given at the Curtis Hotel, Minneapolis, on the 19th inst. The guest-speaker is the Rev. Dr. Preston Bradley, of Chicago, and his subject is "The Window of the World."

Dr. J. C. Shirley, who recently returned from Europe, gave the Huron (S. D.) Medical Society, at its monthly meeting last week, a paper on "The American Medical Association and the Vienna Clinics." We hope to receive this paper for publication.

Dr. Anders A. Westeen, of Grand Forks, N. D., died last month at the age of 66. Dr. Westeen was a graduate of the Medical School of the U. of M., class of '92, and had practiced medicine in Grand Forks for thirty-three years. He specialized in eye, ear, nose, and throat work.

Dr. Alma Dowswell, of Kerkhoven, died last month at the age of 66. Dr. Dowswell was a

graduate of the Wisconsin College of P. & S., class '96, and he came to Minnesota soon after graduating. His practice will be taken over by his son, Dr. Walter J. Dowswell, now practicing at Fergus Falls.

Dr. Harlan H. Homer, in charge of the Government care of the Indians, at Red Lake, died last week at the age of 43. Dr. Homer graduated from the Medical Department of the National University of Arts and Sciences at St. Louis, Mo., class of '12. He was in the Indian Medical Service for a number of years.

Dr. William J. Evans, of Flandreau, S. D., died last week at the age of 66. Dr. Evans was a graduate of the Starling Medical College of Cincinnati, Ohio, class '86, and began practice in Flandreau about twenty-five years ago. He had practiced also at Groton and Sioux Falls, being associated at the latter place with Dr. Mead. He was associated with Dr. Spafford at Flandreau until he went into the drug business.

Dr. J. W. Kernohan and Dr. H. W. Woltman of the Mayo Clinic have gone to Italy. They will visit the medical centers of Italy, Germany, and France, on their way to England. Dr. Kernohan will then go to his home near Belfast to remain until the first of next year. Dr. Woltman will spend some time studying in London, and then will return to the Continent for some work at Vienna and other cities which have important neurologic clinics. He will return to Rochester about the first of April.

The time usually devoted to the meeting of the general staff of the Mayo Clinic on Wednesday, September 29, was given over to the presentation of a bronze tablet commemorating Dr. Russell D. Carman, by the American Roentgen Ray Society. The presentation was made by Dr. E. H. Skinner, Kansas City, Chairman of Executive Council of the Society. Short talks were also given by Dr. A. W. Crane, Kalamazoo, and Dr. P. M. Hickey, Professor of Roentgenology, University of Michigan. Responses were made by Dr. W. J. Mayo, Dr. C. H. Mayo, and Dr. L. B. Wilson. Dr. A. B. Moore presided.

Two Mayo Foundation lectures were given this month by eminent foreign visitors to this country. On October 14, Dr. Edouard Rist, of Paris, lectured on "Diagnostic Pitfalls in Pulmonary Tuberculosis." Friday (October 15) Sir Henry Gauvain, of Alton, England, speaks on "The Treatment of Tuberculous Cripples." Both Dr. Rist and Sir Henry Gauvain have come to this country to attend the International Tubercu-

losis Congress and the meeting of the National Tuberculosis Association to be held in Washington next month. Sir Henry Gauvain will also be a guest at the meeting of the Canadian Medical Association.



Trinity Hospital, Jamestown, N. D.

The new addition to Trinity Hospital of Jamestown, N. D., was formally opened on October 5, drawing several thousand visitors, many of whom drove miles to be at the opening.

The hospital is owned and run by the Sisters of the Order of St. Joseph. The new addition was erected at a cost of \$281,000, and is five stories high and constructed of Hebron brick. A complete new boiler room, a large modern laundry, electrical refrigeration throughout, a filtering and softening water plant, complete ventilating system, etc., are among its new features.

The capacity of the hospital will be 85 beds, which are divided up as follows: 20 obstetrical, 35 surgical, and 30 medical. The hospital will have two completely equipped tiled operating rooms with a sterilizing room in between. A new complete x-ray equipment has been installed.

Nine Sisters are in charge of the hospital, and they have at present thirty-six student nurses. The student nurse force is to be increased.

The hospital staff is open, the following doctors making use of the hospital: W. C. Nolte, G. H. Holt, D. W. Johnson, W. R. Winn, G. C. Main, H. M. Berg, H. K. Wink, W. A. Gerrish, W. W. Wood, A. W. Guest, P. G. Arzt, A. T. Bailey, A. H. Movius, F. O. Woodward, Thorp Carr, and T. L. DePuy.

The new hospital will be one of the best and most completely equipped hospitals in the Northwest. It has a very large territory to draw from.

Technician Wants Work

Have had two years experience as technician and over two years of nurse's training. Best of references. Address 223, care of this office.

Minneapolis Lease of Office to Sublet

An attractive suite of rooms in the Donaldson Building, Minneapolis will be sublet. Address 224, care of this office, or telephone Geneva 2564.

Physician Wanted as Associate or Substitute

Fine location in a county-seat town on a lake in Northern Wisconsin. Population, 4,000. Good

schools, churches, etc. Address 211, care of this office.

Good Opportunity

To join a small group in a community of 40,000. Specialty: obstetrics; children's diseases; eye, ear, nose, and throat work; or internal diseases. Address 208, care of this office.

Physician Wanted

Carpio, North Dakota, wants a physician. A young man can do well there and will get splendid support. For full information address the First National Bank, Carpio, N. D.

Physician Wanted

A good doctor is wanted for a town and country practice in a good South Dakota town. Easy competition. Give age and all information in first letter. Address 214, care of this office.

Position Wanted by Graduate Nurse

In Twin Cities in a doctor's office or clinic. Have had over two years experience in physiotherapy and some x-ray and laboratory work. References furnished. Address 222, care of this office.

Part-time Work with Minneapolis Physician Wanted

A graduate of class A school who is in general practice on the outskirts of Minneapolis desires part-time work with a well-established Minneapolis physician. Address 219, care of this office.

For Sale

New Excel Diathermy machine guaranteed perfect condition, all accessories, auto-condensation pad, and table. A real saving for the right man. Also compoboard partitions. Address 213, care of this office.

Fine S. D. Practice in College Town for Sale

I will sell at a moderate price my practice, office outfit, instruments, and medical supplies, introduce my successor, and retire. The best growing educational town in South Dakota. Address 225, care of this office.

Position Wanted

In the Twin Cities for half or full day by a graduate nurse who is a well-trained laboratory and x-ray technician and has had experience with high-grade men. Best of references and moderate salary. Address 215, care of this office.

Minnesota Practice for Sale

For \$300 I will sell a \$6,000 cash practice in a town of 800 in northern Minnesota. Bank account proves receipts. Practice unopposed. Territory large. Town modern, with water, sewer, and lights. Address 228, care of this office.

Technician Wants Laboratory Work

Has had four years experience in large hospital and large clinic, and is now engaged afternoons in Minneapolis. Desires work in forenoons in this city or permanent work outside of city. Best of references. Address 212, care of this office.

Practice for Sale

Practice and office furniture in a North Dakota town of 1,500. One other physician. Practice established for 12 years. Price \$300.00, includes new

electric sterilizer and complete office furniture. Will yield \$4,500.00 first year. Address 221, care of this office.

Graduate Nurse Wanted

For general duty, who has had operating-room experience and willing to assist or take charge of the operating-room when called upon to relieve the regular operating-room nurse. Location: Small hospital on Mesaba Range. Address 217, care of this office.

Assistant Physician Wanted

To do general practice, mining contract work, Minnesota. Small hospital. Five other assistants. Must be graduate of Class A college, have had hospital experience, and able to do surgery. Give full information in first letter, with photo. Address 216, care of this office.

Physician Wanted

Physician competent in surgery and gynecology is wanted for partner with a well-established Minnesota physician with small hospital and complete office equipment. Preference given to German-speaking physician with \$2,500.00 to invest. Will prove a real opportunity. Address 220, care of this office.

Assistantship with Minneapolis Physician Wanted

A young physician, a recent graduate of the Medical School of the University of Minnesota, who has just completed an excellent internship, is energetic, and willing to work, desires a full or part time assistantship with a busy Minneapolis physician. Address 226, care of this office.

Practice for Sale

In southeastern South Dakota. Well established, lucrative general practice; unopposed; large territory including two other towns without physicians; good roads; good collections; excellent opening to do surgery; reason for selling, son's health. Practice goes to purchaser of my combined office and residence, price \$3,500; liberal terms; money maker for a qualified man not afraid of work. Address 218, care of this office.

Physician Wanted

At Wolford, Pierce County, North Dakota. Town of about 200 population located in the northeastern part of the state, in a thriving agricultural community. Surrounding territory averages about 25 miles to neighboring towns in all directions. Physician will find co-operation and a lucrative practice. For further information write the Farmers State Bank of Wolford, N. D.

Electrotherapeutic Work Wanted

I would like to get in touch with some doctor, hospital, sanatorium, or clinic, who would be interested in an electrotherapeutic equipment. I have a new and complete outfit consisting of one high tension diathermy machine, one Alpine sun lamp, large 1,500 watt therapeutic light, two good massage tables, and an autocondensation pad; plenty of new linen and lots of accessories. I am an experienced graduate physiotherapy technician and can furnish the best of references. Would like to get established with some one on a salary, commission, or other basis. Address 227, care of this office.

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FRACTURES OF THE FEMUR

BY GEORGE G. EITEL, M.D., F.A.C.S.

Eitel Hospital

MINNEAPOLIS, MINNESOTA

"A considerable share of the general practitioner's work and source of income consists in the treatment of fractures. There is, perhaps, no other department of surgery in which good common sense, mechanical skill, and a thorough knowledge of the nature of the injury are more important in securing desirable results than in the treatment of fractures. Success means the building-up of a good and lasting reputation for the practitioner; failure brings reproach and a long-standing source of humiliation. Bad results following fractures have been the tombstones that have marked the termination of an otherwise successful professional career of many ill-fated, unlucky, disappointed practitioners. It is not always possible to prevent unsatisfactory results by the employment of the most modern and approved methods of treatment, but it is a source of satisfaction to know beforehand when to expect them, and to recognize early the complications that justify their prediction. Such knowledge, properly used, is an invaluable safeguard against assuming a responsibility so often unjustly charged against the practitioner in cases in which bad results are inevitable, and owing entirely to the nature of the injury and not to any defect or neglect in the treatment.

"It is very evident that success in the treatment of fractures depends largely on an early and a correct diagnosis. The most flagrant mistakes in practice follow the footsteps of an erroneous diagnosis. Forcible attempts to reduce a supposed dislocation of the hip-joint in fractures of

the neck of the femur are followed by consequences disastrous alike to the patient and to the reputation of the surgeon. The same can be said of fracture of the anatomic neck of the humerus mistaken for and treated as a subcoracoid dislocation of the head of the humerus. The persistent and vicious practice of establishing the existence of a fracture of the neck of the femur by searching for crepitus as the most reliable evidence of the presence of this injury has only too often resulted in converting an impacted into a non-impacted fracture, and, in doing so, removing the anatomicomechanical conditions upon which so much depends in securing repair by bony consolidation.

"A correct diagnosis made, the result of the treatment is determined by the mechanical skill exercised by the surgeon and the care and attention with which he conducts the after-treatment.

"One of the lessons in the treatment of fractures that is so often forgotten or ignored by the general practitioner is that the treatment of a fracture does not always terminate with the union of the fragments by bony consolidation. The physician who takes charge of a fracture assumes a responsibility that terminates only with the restoration of the maximum degree of function compatible with the nature of the injury. This period of time necessarily varies with the location and nature of the injury from three weeks to as many years. Grave mistakes are committed daily by discharging patients with the

removal of the splints at the expiration of the time necessary for the healing of the fracture by bony consolidation."

The above quotations are from the writings of Nicholas Senn, the master surgeon of his time in this country and also a master psychologist as far as the relation of the public to the medical profession was concerned. To the above enumeration of the needful equipment for the management of fractures, "common sense, mechanical skill, and a thorough knowledge of the nature of the injury," might have been added familiarity with the normal anatomy of the involved parts, at least as far as to the neighboring joints. A good endowment of muscular strength on the part of the surgeon and personnel will not come amiss, as some fractures, particularly the older ones, often require considerable force for their restitution. The management of the latter case makes some form of metal fracture-table with provision for traction, abduction, and adduction, highly desirable if not absolutely necessary. This is particularly true where the femur is involved. Injuries involving this bone, particularly where the thigh is muscular or fat, or both, may be very difficult to diagnose, and examinations should be made with much care and judgment. An impacted fracture of the neck may very closely simulate a dislocation, and an attempt to manipulate for the latter may break up the impaction and thereby deprive the patient of his only chance for a useful limb. For this reason and others it is probable that, if available, the *x*-ray examination should precede manipulation unless the surgeon has had great experience and can thereby guard against doing harm. Even the *x*-ray is liable to be misleading, and a first-class roentgenologist is no less essential than a first-class apparatus. It might be added here that frequent films taken during the course of convalescence, preferably without removing the patient from the bed, are most valuable guides to the maintenance of good positions and the correction of bad ones. These films should be kept as part of the records of the cases, for they may be very illuminating evidence in the event of medicolegal complications.

A brief review of some of the difficulties confronting the surgeon in the class of cases under consideration may not come amiss. Fractures of the middle third of the thigh are, probably, on the whole, the easiest to manage. The fragments are held in place, to a certain extent, by the powerful muscles and layers of fascia that surround them, so that adequate traction suffi-

ent to appose the ends, reinforced by side splints, will usually fulfill the most important indications. As the extremities of the bone are approached, however, the obstacles to reduction and retention multiply and increase in gravity.

When the injury takes place near the hip joint the upper fragment is exposed to the powerful pull of the muscles attached to the greater trochanter, the glutei medius and minimus, the obturator externus, the gemelli and piriformis. The psoas, attached to the lesser trochanter, also plays a part. Inasmuch as these muscles, with others, provide for the universal movements of the hip joint, their influence upon a fracture situated in their "sphere of influence" requires no further comment.

When the break takes place at the neck the problem of securing and maintaining a proper contact between the lower fragment and the easily rotated head may be a most trying one. To cope successfully with this, various methods of overcoming the tendency to displacement have been devised.

Treatment by the Whitman cast by the Ruth-Maxwell method and by simple, straight extension may be used under varying conditions to secure coaptation and fixation of the fragments.

In our experience we have found that simple extension suffices in most cases. Fractures of both the anatomical and surgical necks are treated in this manner.

Our method is to apply considerable extension to the entire lower extremity as soon as possible following injury. Immediately following the application of the weights, strong, manual traction is applied, using an anesthetic, if necessary. During this procedure the fragments often can be felt to "snap" into place.

Supracondyloid fractures present the same tendency to displacement. The contractions of the gastrocnemius muscle tend to tilt the lower fragment backward, causing the lower end of the upper fragment to over-ride anteriorly. This displacement is so difficult to overcome that resort must sometimes be had to the calipers. This instrument is apt to cause some pain, but its efficiency commends it to the surgeon who seeks the best results. It can be applied, usually, under local anesthesia.

The following case reports will serve to illustrate some of the difficulties associated with this class of injuries. We hope to present other features in the not distant future.

No. 38013. Mrs. S. E., a housewife, aged 64. Patient of Dr. Strunk with whom we were associated in the management of the case. On January 15,



Fig. 1



Fig. 2

1926, she slipped and fell, injuring her left hip. She was taken home and during the night suffered considerable nausea and vomiting. This continued with abdominal pain until she was brought to the hospital the following day (January 16, 1926). General condition, fair.

Diagnosis: Intracapsular fracture of the neck of the left femur. No impaction. Some angulation. Roentgenogram, Fig. 1. Placed in Buck's extension and discharged March 29, 1926, in good condition. Roentgenogram, Fig. 2.

No 38273. G. E., a farmer, aged 31, entered the hospital February 9, 1926, in good general condition, giving the following history: In April, 1925, he met with an auto accident which fractured his right femur. He was removed to a hospital near his home, where he remained for five months. Union did not take place in good position, and he was obliged to depend on a crutch in walking. There was no pain, however, in the injured limb. There was a very marked outward angling of the femur about four inches above the condyles.

He was anesthetized, an incision was made along the external surface of the femur, and the fragments were chiselled apart at the seat of fracture. An extension apparatus was applied, and he was returned to his room. As the extension did not retain the fragments in satisfactory position the calipers were applied on March 6, followed by satisfactory recovery with good function. Condition at entrance shown in Fig. 3; the very satisfactory retention afforded by the calipers in Fig. 4 and the final raying in Fig. 5. The last was taken too soon

to show the ultimate result, as considerable callus had accumulated during the consecutive traumata that he had received, which had not had time to absorb. A film taken at the end of a year following his discharge from the hospital would doubtless show a much smoother bone. We hope to be able to furnish this when the time comes.

No. 37476. M. K., a farmer, aged 30. On November 27, 1925, the patient fell about thirty-five feet while working on a hay barn. He was brought to the hospital the following day. General condition good.

Examination showed supracondylar comminuted fracture of the left femur. A Buck's extension was applied at the first dressing to be followed by the application of calipers on November 29, as the fragments were not remaining in position properly, the distal fragment tilting downward. This resulted in a very satisfactory alignment as shown on films. On January 13, 1926, the calipers were removed and a full-length cast applied. As the x-ray showed good apposition, the patient was allowed to go home in the ambulance with instructions to remain in bed as long as thought necessary by his attending physician. He visited us several months later and reported good anatomical and functional recovery. Fig. 6 shows the condition upon entry into the hospital. Fig. 7 shows the final outcome.

No. 38378. E. P., a farmer, aged 49, entered hospital February 19, 1926. On February 15, preceding, the patient slipped while walking down a flight of stairs, falling on the right side. He was



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7

carried into the house where his local doctor attended him for four days. During this time he had but little pain and was brought to the hospital in an ambulance on above date, February 19, 1926. His general condition was good. At that time there was marked eversion of the right leg with pain and crepitation near the hip.

Diagnosis: Comminuted intertrochanteric oblique fracture of the femur.

The extremity was put up in an extension splint with a weight adjusted so as to overcome the muscular tension. This, of course, was varied from time to time to suit the needs of the case. He made

an uneventful recovery. Roentgenograms, Fig. 8 and Fig. 9, show the condition at admission and at the time of leaving the hospital.

No. 26087. P. H., a laborer, male, aged 41, was brought to the hospital January 27, 1923, suffering from a fracture of the left thigh following a fall on the ice when skating.

X-ray report: "Films show comminuted fracture through both trochanters."

February 5, x-ray: "Position perfect."

After the necessary examinations had been made the fracture was reduced and retained by a Buck's extension.



Fig. 8



Fig. 9



Fig. 10

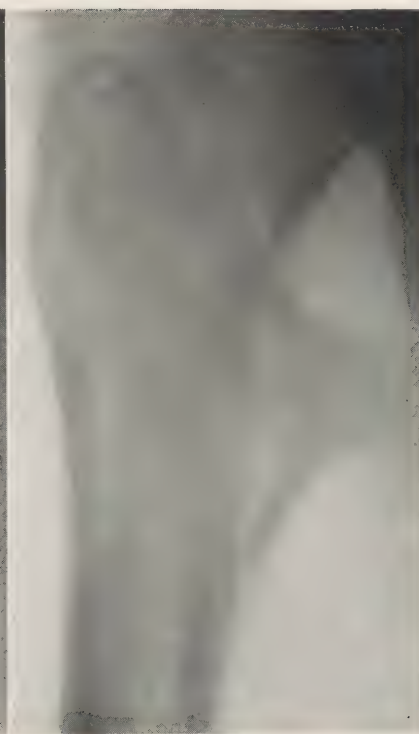


Fig. 11

Nothing of special importance in previous history except that he had had a broken leg when thirteen years old and a broken arm at twenty-five years. Whether this indicated a low resistance of his bones to trauma is an open question.

The following roentgenogram Fig. 10 shows the position of the fragments before reduction and Fig. 11 shows them after union had taken place. No complications arose during convalescence.

DIVERTICULITIS OF THE SIGMOID*

BY CASPAR W. SHARPLES, M.D.

SEATTLE, WASHINGTON

The subject I wish to present is becoming better known all the time. It is a good deal the same as appendicitis was a few years ago,—an occasional case was reported, a great many overlooked, and once in a while a patient was operated on. So it is to-day with diverticulitis of the sigmoid. The cases are becoming more common, and there have been occasional contributions to the literature. Brewer was one of the first men to report some abscess cases, but less has been done on this subject in England than in any other place.

There are two types of diverticulitis, congenital and acquired. They differ in the fact that in the congenital variety all of the coats of the intestine are involved, while in the acquired type, as a rule, only three coats are involved. Therein I think lies to a great extent the danger of pathological changes. The typical diverticulum of the small intestine is Meckel's. In the most simple form one may say it is only a redundant portion of the small intestine with all its coats and all its functions. We have a wide opening with the same lumen as the intestine itself, and no retention of material. Inasmuch as the coats are all the same they are not as vulnerable. They have not been changed from normal into abnormal, but are normal coats of the intestine. The muscular coat is shy in the diverticulum of the large intestine.

We have for our consideration the method of formation of the diverticula. The diverticula seen here (lantern slide) are the ordinary ones of the small intestine that may be either acquired or congenital. The point that I wish to call to your attention is that they are not on the free border of the gut. They extend into the mesentery itself, and are covered with mesenteric peritoneum. Those of the large intestine are not covered with this mesenteric peritoneum. In the small intestine, if we distend it, we find it tends to rupture, when it is dead, into the mesentery, but in the living intestine it ruptures out on the free border. In other words, in this intestine the weakest part of the gut is on the free border. As a cause in the large gut we have to think of the epiploic appendages. A theory presented is that by their weight these epiploic appendages tend to pro-

duce pouches, and where this occurs we have fecal material collecting in them, and so a primary cause of the diverticula is said to be the weight of the epiploic appendages. A little piece works in one place and then another, and then comes out at the side of the wall.

The true theory is that demonstrated by Drummond. I would like to say that I worked this theory out myself and discovered afterward that Drummond had worked it out and published it about the same time.

From this point to this (indicating on lantern slide), as from a spray, these vessels come off and perforate the circular coat. This happens only at this point, where a blood vessel branches off and goes into the epiploic appendage. At the point where these blood vessels perforate the circular coat we have a weakening, and this is made by the foramen through which these vessels enter. You will find that in a great many of these diverticula the blood vessels themselves remain as a part of the diverticulum. You will find both veins and arteries are capable of being demonstrated in these diverticula.

Another thing that may enter into the formation of these diverticula is internal pressure. All the diverticula that are acquired you will find between the mesenteric longitudinal band and the two lateral longitudinal bands. Between the lateral longitudinal bands there are no perforating blood vessels.

Another predisposing cause comes up. Some of these cases occur in aged people, when there is a general weakening of all the tissues. As we get more fat in people the tissues become weaker, and if associated with that we have constipation, with an increased amount of pressure on the inside, we will have this pouch (indicating on slide) pushed out. Drummond calls these diverticula *sacculi*. Some people object to this because we have already existing in the large intestine *sacculi*, but these are the internal *sacculi*. These have by haustration an increased space. It may be that there is a tendency to push the mucous membrane out through the opening of these blood vessels. We have more gas-formation, and that is very likely to come in the lower bowel and be accumulated there. There is a certain amount of fermentation going on there, and we have from this the increased pressure.

*An address from lantern slides, presented at the Forty-Fifth Annual Meeting of the South Dakota State Medical Association, held at Aberdeen, S. D., May 19 and 20, 1926.

We have, then, the three main causes: first, the predisposing cause, the blood vessels going through; then the weakening of the gut from internal pressure; and, third, the general weakening of all the tissues due to advancing years.

I had an idea that we might have a foramen at the point where these blood vessels go out. I examined several specimens, and after the tissues contracted from separation I found a real foramen through which the vessel might be pulled. It was not a true foramen. If we get a sclerosis in old age the blood vessels may get smaller at the time the tissues get more relaxed.

This (indicating slide) is a specimen from one of my own cases in which you can see a pocket beginning to form. I think you can see where the muscular coat ends. There is a heaping up of the muscular fibers at the borders as the epithelial coat comes through.

This picture is another of the same thing, and here (indicating) is the muscular tissue. I think you can see how the diverticulum here is beginning to form. Most of these diverticula are small, varying from the size of a millet seed to that of a bean. Here (indicating) the muscular tissue stops and is heaped up, as you can see.

This diagram shows how the muscular tissue ends. Here is the lumen of the gut, regular in shape. Here (indicating) is a constriction at this point. You notice also that there is not very much epithelial tissue deposited over this portion.

This picture shows much the same thing, the mucosa ending here. At this point (indicating) the muscular tissue is in better shape.

This picture is after Hartwell and Cecil, and is almost universally copied in all articles on diverticula of the sigmoid.

This is another picture from Hartwell and Cecil, and what I particularly wish to show you is how much the diverticular wall is thinned out. The epithelium has practically disappeared, and here is the muscular tissue at this point (indicating).

In looking at a piece of gut with diverticula you see a condition such as this after the fat is taken off. If the gut is covered with fat you will fail to find these little pouches like this and that (indicating).

This is another picture showing the same thing, with the pouches on the outside and the opening to the pouches on the inside. I wish to call your attention to the manner in which the mucous membrane drops down over the openings of the pouches. One often picks up a piece of gut with the pouches on it, but fails to find

them because the mucous membrane covers the orifices of the pouches.

Here is another specimen in which you will notice the same overlapping, and you find in this the large openings from one side, and one pocket with a concretion in it.

This specimen is shown to demonstrate this large concretion caught in the mouth of the opening. This one is much the same and also shows the thinness of the gut on this side. This one (exhibiting another slide) shows the same thing, with openings of the diverticula here, a thick gut here on this side and over here (indicating).

In this very interesting specimen you notice the openings of the diverticula running out here and there, with large amounts of tissue shoved out on either side.

This shows the lipping of the gut again, and how much thickened it may be here. This slide is practically a counterpart of a patient I operated on, showing the condition of peridiverticulitis as we see it. There are certain changes which occur as the result of inflammatory action in the diverticula. Diverticulitis is often spoken of as left-sided appendicitis, and these changes may be due to inflammatory action. The diverticula may be large enough to twist upon themselves, or turn about. They may have foreign bodies implanted in them, or some may pass through and enter the abdominal cavity. They are subject to all the inflammatory affairs that occur in the appendix. We do not see them as often but I think if all the individuals with diverticulitis could be collected together, and then those with appendicitis, it would be found that more have trouble with the diverticula than with the appendix. We may have an inflammatory action in the wall, and that produces a subacute inflammation with a deposit of lymph upon the diverticula themselves. In another instance we have pus in the abdominal cavity. In the case I just showed you there was no pus in the diverticula themselves, but along the sigmoid in either side.

We may have perforation of the diverticula from colloid material that has been obstructed at the neck. We have free pus perforating out from the diverticula and from the abscess. The abscess forms as the result of the foreign material in the diverticulum, which has an opportunity for this because of improper drainage. The fecal matter that forms in the diverticulum stays there, and has a tendency to become hard. The consequence is that this hardened feces irritates the mucous membrane that is there, the mucous

membrane being thin and the other coats thinned out, and then we have a perforation. In either case the patient may be at stool, may experience a sudden pain, and have a perforation of a diverticulum. He may have an abscess and then gangrene and a fistula of one type or another.

These different fistulae are very interesting. The most common cause of the gas fistula in the bladder is the perforation of a diverticulum from the sigmoid into the bladder, which for many years has been thought to be due to carcinoma. It is almost certain when meat fibers and gas can be found in the urine that there has been a perforation of a diverticulum.

This (indicating slide) illustrates the thickened mass of a diverticulitis. If we open an abdomen and find a mass like that we think of carcinoma. It produces obstruction of the gut. This comes not from bacteria themselves perforating the wall, but from toxins. It does not come from the muscular coat, because that is gone, but from the subserous coat, and this simulates carcinoma. Many cases of "carcinoma" that have been operated on and cured for many years were probably this condition, without any carcinomatous changes at all.

Here is an illustration of an abscess having formed around a perforated diverticulum. With an abscess of that sort if it fastens down on the bladder wall it is easy to have it produce a fistula. This slide demonstrates this well. This is one in which an abscess has formed at this point (indicating) and discharges directly into the uterus. You can see the diverticulum here (indicating), and this shows conclusively that the abscess came in this way.

The diagnosis of this condition, aside from the clinical manifestations is easily made with the assistance of the *x*-ray. One thing I wish to suggest about the *x*-ray pictures is that the barium be put in by mouth and left in for twenty-four hours. Then you will get good pictures. If it is put in by rectum one rarely gets good pictures.

Here is another picture showing diverticula here and here and here, protruding at the side. One day I operated on a man, and within a few days a friend and neighbor of his came in to see me, saying that he had pain down in his abdomen and thought he had the same trouble his friend had. I laughed at him, but had some pictures made, and you can see here the number of diverticula that extended all up here (indicating).

This is a forty-eight hour picture of the same case, and shows how many of the diverticula persisted after that time.

Here is a picture of a man who had multiple diverticula, and here I resected out a portion of the gut. These pictures were all made after the operation and not before. He drank a good deal of liquor, and after I operated the second time I think he got out of bed twenty-five times, but I found it did him no harm, and he got well.

Here is a specimen from another patient I was asked to operate on for obstruction of the bowel. Several weeks later I operated and found the angle of the sigmoid down here, and a mass entirely surrounding the sigmoid. I resected his gut at that time because I thought he had a carcinoma, but histological examination showed it to be inflammatory. A few months later this picture was made, showing the diverticula. Between the small intestine and the large there was a small abscess containing pus. The whole thing was freed, and he made a good recovery.

These four pictures are very similar. This patient is not mine, but I saw him a few days ago. He had bismuth from above and bismuth from below. He evidently had a temporary obstruction at that time, and you can see the diverticula sticking out here. In this picture, which was taken twenty-four hours later, you can see how large the diverticula are.

First in regard to this case: It had all the pathological markings of a surgical condition. At operation no obstruction was found. There was no marked inflammatory reaction for the operation was allowed to wait for four or five days. The interesting thing was that we could pick up a piece of gut and swell out the diverticula to the full size shown in the picture.

Another thing is the predicting of some of the inflammatory reactions. In the inflammatory reactions the diverticulum may occur any place along the sigmoid. It makes a large loop, and in patients who have been operated on for appendicitis and a normal appendix found there may be an abscess on the right side from diverticulitis. In the case of a man on whom I operated for a supposed appendicitis the appendix was perfectly normal, but I found an abscess immediately back of the sigmoid. I could not find any diverticula, but I think when we have pictures made we will find diverticula just the same as in these pictures which have since been demonstrated.* The diverticula permits the passage of toxins through the wall of the gut, and this may produce a sufficient degree of inflammatory reaction to cause adhesions to the female adnexa, for instance.

Several years ago I saw a woman of seventy who never had had tubo-ovarian trouble before,

*These diverticula have since been demonstrated.

but who had vague abdominal pains. I could feel a good-sized lump in the pelvis and thought she had an abscess. We operated and evacuated a large amount of foul-smelling pus. We did not do anything more with her, but we felt convinced that she either had a diverticulitis or an appendix on the left.

On another occasion I examined a woman in my office and found that she had a large tumor, which I thought was fastened to her uterus. I told her I thought she had a fibroid of the uterus. For several days she complained of severe colonic pain, and when I opened her up I found a perfectly normal uterus but two large masses of fat on the side of the intestine. I shaved these off and made a hole in the intestine. In each instance there was a diverticulum extending out into the mass of fat. Teller said he thought all

the diverticula should be removed. Looking at these slides I think you will agree that this would be very difficult. In some cases they should be left alone, and in others they should be treated as ordinary surgical conditions. In these cases in which there is trouble because of a peridiverticulitis, with an obstruction, all we should do is to take out an area of the gut where the obstruction occurs and leave the rest alone.

Other fistulæ may form, and this may be the result of an abscess pointing out of the abdomen. A fistula may open there or may come out at the side. A case of the Mayos which is quoted often is one of a diverticulum in which the rectum was resected for a supposed carcinoma. An inflammatory mass was found that proved to be due to diverticulitis.

THE RELATION BETWEEN THE UPPER AND THE LOWER RESPIRATORY TRACT*

BY STUART PRITCHARD, M.D.

Battle Creek Sanitarium

BATTLE CREEK, MICHIGAN

I appreciate very much the invitation to speak before this Academy as I am not an otolaryngologist.

In considering the subject of the relationship between the upper and the lower respiratory tract we have three angles, we might say professional angles, to consider: first, from the standpoint of those who specialize in the upper tract diseases; second, those of us who have spent years in the study of the lungs and bronchi; and, third, the angle at which the internist views the importance of upper respiratory abnormalities.

In comparing the relationship between the upper and the lower respiratory tract, physical findings and clinical symptoms should be considered. I can recall from past experience many of the numerous mistakes I have frequently made in diagnosing an incipient tuberculosis in the upper part of the right lung which cleared after a deflected septum was taken care of successfully by an otolaryngologist, by relieving the congestion of the lymphatics and particularly of the glands around the lung root, the crackling râles which persisted below the clavicles disappeared. Such a mistake is not uncommon. For example, in a

physical examination of the chest we may have râles persisting over a long period of time which are due to abnormalities of the nose or throat, particularly the nose. Again we may have limited movement of one side of the thorax, which, as you know, is suggestive evidence of a pulmonary tuberculosis. The limited movement, however, may be on account of one side being blocked by enlarged glands or to any condition which restricts that part of the chest. With the *x*-ray you can also make mistakes. We were taught in the early days that the fundamentals of chest examination were inspection, percussion, and auscultation, and we now have added the *x*-ray. It is remarkable when we know the clinical history of the case what we sometimes are able to see in the *x*-ray. For instance, we hear a good deal about peribronchial markings. We know that one of the most common causes of increased peribronchial markings is found in the upper respiratory tract, namely, deflected septum. When the septum is straightened, we may lose the abnormal physical findings and the *x*-ray evidence as well.

We have not time tonight to discuss all the respiratory symptoms which may confuse us in the diagnosis of upper and lower tract affections.

*Presented before the North Dakota Academy of Ophthalmology and Otolaryngology, at Minot, N. D., May 24, 1926.

Let us consider hemorrhage or spitting of blood. There is a difference between hemorrhage and spitting of blood. A blood-streaked sputum is not hemorrhage. I think the nose and throat specialists will agree that the appearance of a dram or more of bright fresh blood seldom comes from the upper respiratory tract unless it is post-operative. It is reasonable to assume that the frank spitting of bright-red blood does not come from a congested area back of the nose, the tonsils, or the area behind the ovula. In other words, it is not wise for the otolaryngologist to go on treating a patient presenting such a symptom without investigating the lower tract. There is a relationship between the upper and the lower tract in the symptomatology. The nose and throat specialist may protect himself by having the internist examine the lower part of the tract. Then perhaps he will hesitate to straighten the septum if there is some active condition downstairs.

Fever is another symptom, often vague in character. We know that a very common accompaniment of chronic sinus condition is low-grade fever similar in reaction to that arising from an early tuberculosis. Why? Because there is a chronic absorption, often difficult to find. Transillumination may not find it. Stereos of the sinuses may not show it, but sometimes after repeated examination of the sinus, particularly in the morning, you may find a certain amount of exudate coming from an orifice, showing that there is something that may in some instances cause fever. In a case with a low-grade fever tuberculin helps us in some instances. For example, a patient having an afternoon elevation of temperature of 99 to 100, negative chest findings, some abnormalities in the nose and throat, the question arises, is the limited affection in the upper respiratory causing the fever? If an intracutaneous injection of old tuberculin 1-1,000 dilution be given and no local reaction is obtained, the suggestive evidence is that the fever is not due to an early pulmonary clinical tuberculosis, which may exist in the presence of negative physical and *x*-ray examinations of the thorax.

On the other hand what have we to deal with in some of these indefinite lung cases? The physical examination and *x*-ray films often tell us nothing, yet the patient is presenting symptoms of cough and expectoration. Such a condition is not uncommon following the influenza. You are all acquainted with the persistent cough which lasts so long after influenza. Many times when the nose and throat specialist fails to get

a result in these cases it is because the bronchial glands have not been investigated. In many instances tincture of iodine given internally will give you good results, as iodine floods the bronchial glands and is not as quickly eliminated as the iodides. In investigating another respiratory symptom, which is cough, we are again on familiar ground because cough may come from any part of the respiratory tract. It is well for us to give consideration to the fact that cough may come from extrarespiratory sources. Cough may come from an affection of the pleura. Sometimes we have cough from old adhesions in the pleura, though no acute inflammatory process is going on. When the patient is tired these adhesions act like an old rheumatic joint and the result is that cough is stimulated. Again we have cough from middle ear irritation. When a child comes to us with a history of a recent acute respiratory condition, with clear chest, *x*-ray films, and negative physical findings in the chest, the internist should refer the child for examination of the middle ear. Cough may be caused by irritation of the meninges. Then we have cough from some types of irritation below the diaphragm; that is, an irritation of the under surface of the diaphragm may cause cough. That brings up such conditions as gall-bladder disease, chronic appendicitis, a gastric or duodenal ulcer, or new growths below the diaphragm. Some claim that cough can come from uterine disturbances. We have never been able to experimentally produce stomach cough.

[The speaker showed a number of lantern slides at this point.]

DISCUSSION

DR. D. A. STEWART (Ninette, Man., Canada): It is always a delight to hear Dr. Pritchard. His subject was presented, not only with accuracy and clearness, but, as usual, with a great wealth of clinical material. Dr. Pritchard is one of the educators of the profession on this continent.

I think we now recognize that tuberculosis is not the only disease characterized by certain symptoms common in the pulmonary area. It has taken some time to learn that. Twenty years ago, or so, when Dr. Pritchard began chest work, the big thing we all tried to put over to the general profession was that the diagnosis of tuberculosis ought to be made earlier. Almost anything characterized by cough was likely to be called tuberculosis, and the onus of proof was not on the man who made a doubtful or early diagnosis of tuberculosis, but on him who would unmake that diagnosis. Now we stress not earliness so much as accuracy of diagnosis, and the onus of proof is on the man who makes the diagnosis in a border-line case.

Dr. Pritchard has a happy way of speaking of nose and throat people as the "upstairs" people, and of chest men as the "downstairs" people. The

diagnosis of tuberculosis of the larynx is usually made a little earlier, I think, a little better and a little more accurately, if you make it from downstairs rather than from upstairs, from what may be found with the stethoscope, rather than altogether from what may be found by the laryngoscope.

Diagnosis is not altogether an arithmetical process. It is not adding one to one to make two, and two and two to make four, and writing plus and minus after certain rows of figures. We cannot say cough is present, expectoration is present, this is present and that is present, and, therefore, the disease is tuberculosis. You will see from a number of conditions that Dr. Pritchard has described and from what he will show tomorrow that you have many diseases that have exactly the same symptoms,—cough, spitting of blood, loss of weight. We forget sometimes that diagnosis is not only science but art. The artist coming into a room in which a great many paintings hang, does not get down with a microscope and examine each detail, but he stands back and takes in the general effect of each picture. We must take in the general effect, looking at the picture rather than at the details that make up the picture. Some of the cases discussed by Dr. Pritchard are to be differentiated from one another, not by adding up details, but as one picture is differentiated from another.

DR. ROLFE TAINTER (Fargo): Dr. Pritchard mentioned sinus infection. I think we might also classify what we call sinus congestion as a cause for cough. We know that nature intended with each inhalation that the air should circulate through the sinuses and become warmed and filtered before it is taken into the lungs. Often you look into a nose, and there is no deviation of the septum. We transilluminate the sinuses and they look clear, but we see a thick congested mucous membrane closing the normal sinus openings. Now in a case of this type the patient is inhaling unfiltered air of improper temperature which may be irritating to larynx or bronchi; and thus a cause for cough.

DR. L. A. SCHIPFER (Bismarck): May I ask Dr. Pritchard when he closes the discussion to enlighten us on his idea of the method of causation of the disease process on the same side in the chest as the disease process in the nose.

DR. K. E. DARROW (Fargo): This spring I visited the clinic of Graham and Singer in St. Louis, together with the nose and throat men. They did not have any rules for diagnosis. They apparently took the findings of each one and correlated them. It was surprising how many of these obscure respiratory infections and lung infections were cleared up after going on for years and years without proper diagnosis. I think it is refined diagnosis that counts to-day.

I think a paper like this is most valuable to us,

and I would certainly thank Dr. Pritchard for presenting it.

DR. THOMAS MULLIGAN (Grand Forks): I would just like to cite a little practical instance because it corroborates some of the statements that Dr. Pritchard has made. I have to be personal to do it, but I think I will take a chance. A year ago last summer I had a very severe cough which acted like a whooping cough. It was an exceedingly severe cough and quite exhausting, and I was bringing up a nasty-tasting sputum. Some of the patients in the hospital had very much the same thing. I got tired. Dr. Grassick said that in Battle Creek was the elixir of health and everything that was good. I went there and into the nose and throat department. Dr. Wenke found a deflected septum and some infection in the ethmoid cells. He said that was the cause of the cough. I thought he was way off, but I let him treat my nose, and the infection cleared up. After he started treating the nose the cough and expectoration disappeared, and later on he removed the septum. The results showed that Dr. Wenke's diagnosis was right.

I think it is a live sign when the general practitioner and the men in special fields of work will listen to each other's papers. Dr. Pritchard showed in his excellent exposition of this subject that his position is not limited to any particular part of the anatomy. He looks into the whole field. I think that is what the medical profession must do. We have got to think of the different parts of the individual, and if we are not competent to do it ourselves and we have covered our examination as thoroughly as we can we should have somebody else co-operate with us.

DR. PRITCHARD (closing the discussion): Someone asked me how long after a submucous resection can we expect results? I assume he means results in the lower respiratory tract. I always inform the patients that they need not expect the maximum results for two years. They may show very decided results in two or three months, but I have found that the maximum result can be looked for not before two years time, because it cannot be expected that these tissues are going to be transformed into new channels immediately. Submucous straightening gives you free drainage. That is another reason why we do not know whether it is the sinus infection that is causing the cough or the pressure of the submucous or the result of the submucous thickening. Consequently there are a number of factors which we must take into consideration. I make it a rule that these patients must go back to the nose and throat specialist every three months for two years.

The question of the side on which the two infections come was brought up. We have cases in which the nasal process was on the right side, and the right lung showed physical changes. I do not know why, but there is a marked selective action.

MODERN ASPECTS OF THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS—PART II

By J. ARTHUR MYERS, PH.D., M.D.

Medical Director, Lymanhurst School and Hospital for Tuberculous Children; Chief of Tuberculosis, Minneapolis General Hospital; Assistant Professor of Preventive Medicine, University of Minnesota, Etc.

MINNEAPOLIS, MINNESOTA

VI. THE DETECTION OF TUBERCULOUS INFECTION

When we consider the small size of many latent tuberculous lesions or even of many early active lesions and the many and obscure parts of the body where such lesions may be located, we cannot but wonder how it is possible to ever detect their presence. Although tuberculin, first produced by Koch, did not prove to be the powerful therapeutic agent he anticipated, it has proved to be our most valuable agent in the detection of tuberculous *infection* both in man and animals.

Cutaneous tuberculin tests.—In 1907 von Pirquet announced the discovery of a cutaneous tuberculin reaction which has stood the test of years and must now be regarded as one of our safest and most reliable procedures for the detection of tuberculous infection. The area of skin to be tested (usually the inner surface of the fore-arm) is washed with alcohol or ether, thoroughly dried, and three small scarifications are made about one and one-half inches apart. In making the scarifications no bleeding should be caused. Upon the most proximal and the most distal scarifications is placed some of Koch's Old Tuberculin diluted in sterilized glycerine (one part of tuberculin and three parts of glycerine). (Tuberculin ready for use may now be obtained through the various drug houses.) This is well spread over each of these scarifications and after five or ten minutes exposure to the air a small dressing is applied which may be removed after a few (two or three) hours. The test is observed at the end of twenty-four hours and again at the end of forty-eight hours. If the test is negative the two scarifications to which tuberculin was applied will appear the same as the center one, serving as a control, to which no tuberculin was applied. Each will present a brownish crust, but there will be no induration of the adjacent skin. On the other hand, if reaction has occurred around each scarification to which tuberculin was applied, there will appear an area from four millimeters to approximately two and one-half centimeters in diameter, which appears pink or even dark-red with a purple hue. These areas are some-

what indurated. They last from a few days to slightly more than a week, when they heal, leaving no trace on the skin. This test is absolutely harmless, there being no present or subsequent reaction of any kind other than the skin reaction just described. However, the test is not applied in the cases of children suffering from the exanthematous diseases nor in persons suffering from such skin conditions as eczema, impetigo, and tuberculosis of the skin. The von Pirquet test is not infallible, for in some cases with definite tuberculous infections the characteristic reactions fail to appear. If perchance the tuberculin is not well applied or gets rubbed off too soon, no reaction will result. Again, it has been shown that during the course of actual infections, such as measles, pneumonia, typhoid fever, diphtheria, etc., the reaction may be absent, while before it was present, and soon after it may again be noted. The reaction may fail to appear also in cases of acute or advanced tuberculosis, particularly as the termination of life is approached. In some cases the reaction is delayed, and does not appear for several days. Therefore in all cases with negative reactions observation should be made again for approximately one week or ten days after the first negative reading is made.

There have been introduced numerous modification of the cutaneous test, such as those advocated by Lautier, Moro, and Lignieres. Besides, there are those who apply tuberculin in the nasal mucous membrane, to the urethra, and vagina. None of these modifications or procedures has any special advantage over the von Pirquet reaction, and, in fact, most of them are not equal to it.

The intradermal tuberculin test.—In 1908 Mantoux introduced the intradermal test. With a hypodermic syringe equipped with a very fine needle, one minim of a dilution of 1 to 5,000 of Koch's Old Tuberculin (prepared just before the injection or it may also be secured ready for use through the drug houses) is injected into the dermis, the surface of the skin at the site of injection having been carefully cleaned with alcohol and dried. The bevel of the needle should

always be directed toward the surface, and great care must be exercised in preventing the tuberculin from gaining entrance to the subcutaneous tissues. If the reaction is negative, the only evidence of the procedure will appear as a slightly red area caused by trauma along the course taken by the needle. This entirely disappears within sixty hours in most cases. On the other hand, a positive reaction manifests itself in twelve to twenty-four hours by a bright-red nodular infiltration with a diameter varying from one-half to slightly more than three centimeters. This area is surrounded by a much larger area of erythema, usually light pink in color. By the end of forty-eight hours the reaction has reached its height, after which it begins to recede, the area of erythema disappearing quickly, but the central red area remaining for several days and even leaving pigmented traces in the skin for several weeks. This test properly applied is free from danger, since, like the von Pirquet test, it produces no reaction except the local one about the site of its application. It is slightly more reliable than the von Pirquet test in that the tuberculin is in no danger of being removed by clothing, etc. When the test is negative it is repeated with a dilution of tuberculin of 1 to 1,000. If this produces no reaction the test is again repeated with a dilution of 1 to 100. If this proves to be negative the patient is said to have no tuberculous infection.

The subcutaneous tuberculin test.—Before the von Pirquet and the Mantoux tests were introduced, tuberculin was frequently given subcutaneously for the detection of tuberculous infection; however the subcutaneous use of tuberculin in the diagnosis of tuberculous infection has been supplanted by the more pleasant and harmless tests of von Pirquet and Mantoux. The subcutaneous test will be discussed further under the subject of diagnosis of tuberculous disease.

Until quite recent times it was believed that, once infected, a patient would always react to tuberculin. If this had proved true it would be very easy to determine just how many persons in a given community had been infected with

the tubercle bacillus. Krause and others have presented unmistakable proof of the fact that the reaction to tuberculin in some cases may gradually fade and finally vanish entirely. Such cases may include, not only those who have had slight infections, but also those who have had extensive, even multiple tuberculous lesions. Attention will be called to this subject again under the discussion of the healing of tuberculous lesions.

It must not be lost sight of that, though the tuberculin tests just described inform us of the presence of tuberculous infections, they give us very little help as to their duration, extent, activity, or location. In a suspected case of tuberculosis a positive result does not tell us even that the present symptoms are due to the tuberculous lesion. A test with negative result must be repeated and sometimes one or more of the remaining tuberculin tests must be applied before it is safe to say that tuberculous infection does not exist.

Because bovine tuberculosis is transmissible to man and because man depends so much upon cattle and swine for his food supply, every physician should be interested in this disease in animals and should always be ready to co-operate with veterinarians in fighting it. It has been shown that tuberculin is extremely useful in detecting tuberculous infection in cattle and swine. This is a valuable aid inasmuch as many animals that show no evidence of tuberculosis react positively to tuberculin. On the other hand, tuberculin testing is not infallible. Some animals, like human beings, with very extensive and active disease may react negatively because they are already saturated with tuberculin. This has led to the "doping" of cattle in some instances. An owner who knows that his herd is to be tested will by injecting tuberculin a few times saturate the animals so they will react negatively. In a short time, however, if the tuberculin is discontinued the animals with tuberculous infection will react positively. Such sources of error make doubly necessary the pasteurization of milk in order to make it safe for human consumption.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

MEETING OF SEPTEMBER 15, 1926

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town & Country Club on Wednesday evening, September 15, 1926, at 8 P. M. Dinner was served at 7 P. M.

The meeting was called to order by the President, Dr. H. L. Ulrich. There were 26 members present.

The minutes of the May meeting were read and approved.

Dr. Hynes, Secretary-Treasurer, read the reports of the Secretary-Treasurer for the year 1925 and 1926. These were approved. The Secretary-Treasurer also called the attention of the Academy to the amount in the Fellowship Fund and suggested that the Academy work out some plan of offering a prize for original research work or a fellowship to be paid from the income of this fund. The Executive Committee was instructed to work out some plan and present the plan to the Academy for action.

The annual election of officers resulted in the following men being elected for the ensuing year:

President.....Dr. Frank E. Burch, St. Paul
Vice-President...Dr. John E. Hynes, Minneapolis
Sec'y-Treas.....Dr. Carl B. Drake, St. Paul

Dr. Arthur T. Mann (Minneapolis) reported a case of carcinoma of the rectum, as follows:

I wish to report the case of a farmer 55 years of age. When he came in he was bronzed and fairly vigorous looking, and yet he looked as though he had lost something under his tan. He said he had been perfectly well up to the 12th of July of this year. At that time he began to have a feeling of fullness in his stomach and began to lose the desire for food. He had lost eight pounds in weight. He had always had two stools a day for years, and from two to three stools were his normal. Since July he had begun to have from two to five stools a day. On the 20th of July (eight days after he was conscious of any trouble) he had a pain in the epigastrium, just beneath the lower margin of the ribs, and went to bed. Hot water bottles and turpentine took care of that attack, but he never felt well after that time. We could get nothing further in his history except that he had a little difficulty with getting his food into his stomach, and, as soon as it was there, he felt full.

He presented a rounded mass in the right epigastrium which elevated the abdomen about one inch. It was hard and resistant, and, while the entire abdomen was tight, I felt I could distinguish an edge which I thought might be the liver. I thought I could get a notch where the notch in the liver ought to be. The patient had no urinary trouble. The prostate was normal in shape and consistency, perhaps a little larger than usual. He complained of feeling very tight.

I put him through the series of x-rays with the following results: The swallowed food would stop at the level of the diaphragm; the esophagus filled with the barium and swelled to a size rather larger than normal (shown on film); with certain motions the barium meal would gush over into the stomach, showing that there was no real stricture at the cardia, and the stomach was pushed over to the left. Under the fluoroscope the stomach was seen pushed backwards, as well. The barium meal went through the stomach with the proper amount of speed, when it once was in the stomach. There was pressure from something which was pushing the organs apart in all directions.

(2d x-ray shown.) This condition was always present and the barium was pushed over to the left

of the fundus as though a large fist were thrust against it.

The blood count was normal. Hb., 80 per cent; leucocytes, normal; and white cells, normal. The man looked and behaved like one who had something rather seriously wrong with him.

(3d x-ray shown.) The diaphragm was pushed up so that it went up to the seventh rib on the right, posteriorly, and also was high on the left so that it had pushed his heart over out of line.

(4th x-ray shown.) The lower margin of the liver shows here a fairly normal line, but lower than normal.

The spleen was nearly normal. I thought it was just slightly enlarged to percussion, but not enough to call it greatly enlarged, that is, it extended between the 9th and 12th ribs.

The main prominence was at the place where a cyst of the pancreas does present, but this did not feel like a cyst of the pancreas (it was too hard and its edge rather too definite), so I felt that we had an enlarged liver and not the pancreatic cyst which they were inclined to work out from the x-rays.

This man was willing to have anything done that would help him. He was willing to have an operation, but I was not sure I wanted to operate because I could not see what an operation would do, unless to establish a diagnosis, so we kept him in the hospital a few days for further study. I examined the prostate again, and, by raising him up on my fist, I could get above the prostate and could feel a mass in the region above the prostate and beginning at the top of the prostate. This, I felt, could be from the top of the prostate, or in the cul-de-sac, or, possibly, in the rectum itself. It was a smooth, flattened, truncate mass, broadening upwards and I was unable to reach the top of it. So my diagnosis at that time was "enlarged liver from secondary carcinoma; 75 per cent primary in the rectum and 25 per cent primary in the prostate."

The stools were examined. They were frothy and contained fat, and it seemed as though his pancreas might be at fault. He was given glucose and, two hours after, had 0.18 per cent blood sugar. 0.12 per cent is considered about normal so 0.18 per cent corroborated the notion that possibly the pancreas might be at fault. He started to have diarrhea, and I decided no operative interference was justifiable. He rather rapidly lost strength. We had the diarrhea controlled within twenty-four hours, and he felt a little better. We had another examination of the stool after he had been on a fat-free diet, and we found it normal. His blood studies throughout were normal and showed none of the changes which might give us an enlarged liver. His weight was 167 pounds; his winter weight had been 175 pounds.

I had never seen a liver so tremendously enlarged from carcinoma as this one that was not nodular so that one could feel the nodules. I came to the conclusion that it was the liver that was pressing the stomach over and not the pancreas, and that explained his stoppage at the diaphragm, that is, the cardia was pushed over so that it was like a sharply-bent ribbon and closed the esophagus like a valve. At that time I told the family just what I thought the diagnosis was.

The man suddenly got worse and died in the night. We had a postmortem, at which time we found it

was carcinoma of the rectum. Here was a man almost gone from carcinoma of the rectum and who had had no symptoms he was conscious of until two months before his death. The liver weighed 5,250 grams, three times the normal. On section it was one mass of small carcinomas (secondary), none of them large, and only small patches of liver substance could be seen. I have never seen such an enormous liver from any other cause than carcinoma. The lumen of the bowel was smooth.

DISCUSSION

DR. HEAD: Was there occult blood in the stools?

DR. MANN: Yes, there was occult blood in the stools persistently, but we did not get the significance of that sufficiently. The increase in the blood sugar, after the administration of the glucose, probably was due to loss of liver function instead of the pancreas. The loss of liver function to a degree sufficient to influence the blood-sugar test is so rare that this point is exceedingly interesting.

DR. ULRICH: Dr. Mann mentioned the glucose test as being 0.18 after two hours. In liver insufficiency the sugar level in the blood is low. When one takes out the liver the animal dies of hypoglycemia. It is quite possible that in such a marked case of liver insufficiency (the liver studded with cancer nodules) that a glucose tolerance test would give one a diabetic curve.

Dr. Herbert Jones (Minneapolis) reported a case and showed *x*-rays of a case of traumatic rupture of the diaphragm:

I wish to report the case of a middle-aged workman who was sitting on a load of ties leaning over when the boom of a derrick fell on him and pushed his shoulder down onto his hips. It seemed as though all the blood in his body went to his head. He had a fracture of both ear drums and hemorrhages into the conjunctivæ. The first report on the *x*-ray was that he had pneumothorax. I aspirated him but got nothing with needles, and then the *x*-ray showed there was thickening of the pleura. (*X*-ray shown.) This is the clavicle and this is the test meal. This side at first was completely solid. In the fluoroscope the food would come down to the cardia and then pass up into the chest. *X*-ray shows the test meal in the stomach, which is located in the left chest.

He had diaphragmatic rupture and hernia of the stomach. He is living now and doing well.

DISCUSSION

DR. SCHWYZER: I have had two cases of traumatic rupture of the diaphragm. One was caused by a tree falling on a man when he was a young fellow. He had had that condition for many years (forty) and was miserable. At times he had signs of obstruction. Finally he had so much discomfort that it was thought to be gall-bladder trouble, and the doctor took out his gall-bladder. He finally had frequent attacks of intestinal obstruction. That case was operated on by first going into the abdomen. There was no small intestine to be found in the abdomen. We found the stomach and the diaphragm normal. No opening into the chest cavity was seen. We now followed the lower part of the duodenum and saw that from the duodenum

the jejunum ran upward underneath the transverse mesocolon into a space behind the stomach. The entire small intestine and a loop of the large gut could be pulled down into the abdomen. *X*-ray pictures had shown that the gut reached to the 2d rib. After all the intestines were replaced the chest wall was opened and a rent in the diaphragm was found. The gut thus had entered the chest behind the stomach. We had not seen anything abnormal at all when the diaphragm was examined from the abdominal side. A piece of fascia, which we took from the rectus sheath, was sewed over the rent in the diaphragm, which we had closed by interrupted sutures. The operation was about three years ago. The patient, whom I saw this early summer, is all right.

The other case was also traumatic. In the *x*-ray picture the transverse colon was seen to the right of the heart. The patient, who was a woman, had had an injury compressing her abdomen. The transverse colon came from the left over the left edge of the liver, and seemed to have a tendency to return from there even after the diaphragm had been sewed to the base of the ensiform process and the nearby muscular structures of the abdominal wall. Therefore, the left border of the liver, which had a tendency to fall down into the abdomen, was sewed to the corresponding portion of the diaphragm. This patient is also well.

A third case I saw when it was operated upon by Dr. Colvin. It was not of traumatic origin. The stomach was in a small cavity near the hiatus esophagus.

Dr. H. L. Ulrich (Minneapolis) gave the President's Address, entitled "Some Aspects of Hypertension." This was illustrated with numerous lantern slides and charts.

DISCUSSION

DR. S. M. WHITE: Dr. Ulrich has given us a very instructive and entertaining presentation of the subject. The paper brings out one phase of it which interests us particularly because of the studies made in recent years of the effect of various substances on cell membranes. The work of Green has shown the variability in ease with which the red cells can have the membrane destroyed and the hemoglobin liberated in hemolysis, and he has shown that it is the effect of certain substances on the membrane of the red cells which makes them more friable.

Dr. Ulrich has suggested in his paper that in essential hypertension we may have substances which affect the membrane of the smooth muscles of the walls of the arterioles, rendering them less susceptible to the depressor substance supposed to act by relaxing the arteriolar walls. This hypothesis of Westphal and others is stimulating and interesting because we are beginning to understand some of those principles relating to surface tension function of cell membranes.

New fields are being opened up and it has been instructive to me to get the point of view which Dr. Ulrich presents in this connection because it may explain a certain alteration to emotional influences which appears to occur in hypertension. The liability of blood pressure, dependent on emotional factors, is often increased in the early stages

and may become greatly diminished in the later stages of essential hypertension. He suggests a change in the cell and its membrane which alters its response to stimuli.

DR. J. W. BELL: President Ulrich's paper is a very interesting and instructive one. Essential hypertension is a problem we are all vitally concerned with. We are meeting with it more frequently the last decade and, unfortunately, in much younger persons.

I was quite surprised the early part of last month, in the case of a young, conscientious teacher, twenty-four years old, to find a systolic pressure of 225. This young, nervous woman was free from evidence of structural disease. Under complete rest and restricted diet, at the end of a fortnight the systolic registered 165 and the diastolic 85. She then resumed her school work, and yesterday, at the end of two weeks it again registered 210 systolic.

Hypertension is a serious problem of apparently many angles. Owing to its increased frequency in the younger people, it demands careful consideration.

DR. SCHWYZER: I want to ask the doctor about lecithin. Did you not say that we must know more about the chemistry of lecithin? We know the chemical constitution.

DR. ULRICH: There is no way of isolating it and estimating it at the present time.

I want to thank Dr. Bell and Dr. White for their discussion of my talk. We have got to find out why these muscle cells (in the precapillary area) change. We talk a lot about worry and the stress of modern life in the production of hypertension, but in the end it is the muscle cells which produce the pressure. Why do they do it? There must be some recognizable factor. I am practically giving Westphal's ideas in my paper and corroborating them in a small way by our work at the General Hospital.

If cholesterolin is a factor then we are going back to our old-fashioned ideas about diet. There is no reason why we could not put these people on a nitrogen balanced diet and then keep them there. In cases where there is no hypercholesterinemia such a diet would be of no use.

I think we are approaching, as Dr. White said, a physiological clearness on this, rather than a discussion of doubts. Hormonal factors alone do not explain away the situation. The point I make of fixation of function is new. I have never seen it in literature. It is similar to fixation in the auricle. Fixation of smooth muscle must be discussed in a broad way. We must learn more about smooth muscle physiology. We must get at the reason for this fixation before we can do anything in prevention and treatment.

CARL B. DRAKE, M.D.
Secretary.

pages. Illustrated. Philadelphia and London: J. B. Lippincott Co., 1926.

This contains many notable articles on both medicine and surgery. Among the best of these are the following:

Jourda (L.M.), Toulouse, France, writes on the blood dilution in the pathology and treatment of attacks of gout. In this article is demonstrated by clinical application the hypothesis that in gouty patients there exists a hyperuricaemia with the uric acid distributed in the total blood and in the blood serum. The serum contains more uric acid (free) when the blood concentration is decreased, that is, when its viscosity is diminished. By increasing the viscosity through the medium of a dry diet, the ratio of blood uric acid to serum uric acid is changed allaying the gout attack.

W. J. Mayo writes on changes of blood chemistry during operations with treatment by means of glucose, insulin, salines, and sodium bicarbonate.

Frosch writes on the sedimentation test as an aid to diagnosis and prognosis, and says that in 100 cases improvement of the patient follows through lengthening of the interval and the reverse through shortening of the interval.

A. A. James and N. B. Laughton found that liver extracts reduce blood pressure in pathological hypertension, though as to permanency of reduction more work is needed.

Irwin Smith cites the work of Kotzareff and Weyl, of Geneva, by injecting radiocolloidal substances into the blood stream, the cancer cells fixing this substance. The location, size, and involvement of the cancer may be outlined upon a photographic negative after several hours exposure.

Graham, Cole, Moore, Copher, Whitaker, Milliken, and Carman have done much to perfect cholecystography by means of oral administration of sodium tetra-iodophenolphthalein.

Shattuck, Browne, and Preston say the icterus index of the blood and the van den Bergh test for bilirubinemia are very valuable in the estimation of liver function.

Arthur Grunberg says injection of 1-2 mgm. phloridizin will provoke glycosuria without hyperglycemia during the first three months of pregnancy in 80-90 per cent of the cases.

Copeland and William say psicaine (and artificial cocaine) is the practical equivalent of cocaine without its addiction possibilities.

Balfour and Reid say gastric and duodenal surgery has been advanced considerably. Removal of cerebellopontile tumors has been made much safer and more effective by Dandy. Operations for angina pectoris and Raynaud's diseases and associated conditions are attempted in a few instances with some successes.

Operations for mitral stenosis and associated cardiac conditions have a high mortality, but no more so than other fields of surgery when first attempted.

The use of carbon dioxide in anesthesia relieves much of the distressing complications of anesthesia with lowering of its danger elements.

There are numerous other articles in this volume which are distinct contributions in their respective fields of such excellent merit that it is unfortunate they may not be mentioned here.

—DANIEL H. BESSESEN, M.D.

BOOK NOTICES

INTERNATIONAL CLINICS. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, in collaboration with others. Volume I. Thirty-sixth series, 1926. 309

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The Hennepin County Medical Society
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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THE STATE HOSPITAL AND THE MEDICAL SOCIETY

The association between the hospital (both secular, general and state hospitals) and the medical society in its immediate vicinity needs to be encouraged. As an illustration of this statement the writer had the pleasure and privilege of giving a clinic at Yankton (S. D.) State Hospital for the Insane before a district medical society comprised of five counties within a comfortable distance and to which all the practitioners in the district could easily drive. There were approximately twenty men, perhaps more, who were members of the district society, and forty pre-medical students were sent up from the Vermilion University, a state institution, to hear the clinic.

The medical staff at the hospital had prepared a number of cases and presented them with brief histories so as to show the attending physicians and students the commoner forms of mental disease. In the first group of cases were the type of dementia præcox, the simple form, represented by a patient who was rather quiet and inattentive and more or less dull mentally, but without any of the typical characteristics that are so commonly found. She was looked upon as a patient that was inferior in her complexes, indifferent to her surroundings, simple in her habits, and

able to take care of herself in part. Sometimes these people are brooders or are irritable, restless, irresponsible, and they have hallucinations of various sorts. This form of præcox is the most frequent, and it takes more young people to institutions than any other type of mental disease. They usually have a mental deterioration. Their intelligences and emotions have lost companionship, and they do some strange things at times.

The next patient under this general head was of the paranoid class. These people have fixed and persistent ideas and are usually full of suspicion and have delusions of persecution. They are the type that are frequently in trouble. They are apt to be in court, brought there for some misdemeanor or they themselves institute court proceedings against innocent people because of their inflated ego. They think others are trying to do them harm, and not infrequently many of the court proceedings are carried on by paranoiacs. They are the people who start scandals, who are pests in their own neighborhoods, who are disjointed, out of order, and difficult to satisfy. They are more or less dangerous to the public welfare because their ego and their judgment are so out of order that they do not function mentally.

The hebephrenic types are very much like the simple forms, except they are given to more activity. They become confused and are automatic in their attitudes, and they are usually unrecognized in their early symptoms. This is the form that commonly comes to the general practitioner, and because of the indefiniteness of their symptoms the general practitioner is apt to pass them over as of no consequence. Hence, it is an argument for careful investigation into the nervous mental history of the family and particularly of the individual, for the general practitioner must realize that the responsibilities of a case of this type are of prime importance, and if he recognizes it he is in a better position to tell the family and to institute proceedings for treatment of the patient. These are the people who are apt to become demented. They do not recover in any of the three forms mentioned, except among the simple forms there may be some improvement and in occasional cases an apparent and full recovery.

Of the katatonic type you see some very strange cases and they are at once recognized. They are stiff and rigid in their attitudes. They hesitate about doing things and they assume postures, are more or less negative and stuporous. Their hands and arms and even their legs may be put in grotesque positions and remain so for

hours at times until one would think they would be completely exhausted.

The next series of patients belong to the typical paranoiacs. This form of insanity is relatively infrequent, but it is known to the public through the newspapers because of the reported actions and trials and court proceedings. These are the people who have very firmly fixed ideas of suspicion and persecution. They sometimes come to a point in their lives when they are dangerous, extremely so, and not infrequently commit crimes of major orders. And yet they can control themselves at intervals and appear nearly normal and unless their delusions are brought out they sometimes escape the observing and the diagnosis is not made although the history literally shows they have been paranoiacs for years. There are many such cases as this in our criminal hospitals for the insane. They represent personages usually of the highest order. Can you imagine a man who was raised in illiteracy in the slums fancying himself the Christ? They become in their own minds great discoverers. They are fanciful and parade up and down the streets in grotesque costumes entirely out of the picture of the general life of the individual and their typical selves.

Another group presented, which is very frequently not recognized, was the manic depressive psychosis. This type of depression begins in early life and is not infrequently ushered in by periods of over-activity and over-exhilaration, which suddenly terminate and the patient becomes depressed, anxious, and worried. These two types alternate at varied intervals and are recognized as a form of circular insanity. They are depressed for a few weeks and suddenly their depression is relieved by over-activities, mental and physical, which occupy the stage for a period of time and then run around the same circle again. There are a great many of these people in the world. Many suffer from it and in varying degrees. They finally wind up after full maturity or in the period of the climacteric as involutional melancholia; that is, a melancholia which becomes more and more progressive until it settles itself in the individual as a continued symptom complex. They have behind their histories a physical disability of some form, and usually it is of the vascular type. The family history usually shows, too, that there are others of the same character in the family going back one, two, or even many generations, but when they reach the involutional stage they are chronic cases.

Then, too, the staff showed cases of general paralysis that had been subjected to malarial treat-

ment. One was a man in middle life, the other a young man of twenty odd. The older man was a typical parietic. When asked how he felt he replied in the usual bombastic style, and he exhibited delusions of grandeur and extravagance in a typical way. No one could possibly question the diagnosis because this man rolled in millions, talked in millions and was exalted and happy. Some day perhaps he will have convulsions or hemiplegia, and then he will become quiescent and pass on. The second case was a young man who showed very great response to the malarial treatment, although he replied in the same hearty and abrupt manner that he was "fine." He admitted he was going through the extravagant phase of the disease, but had quieted down.

The staff also showed cases of senile degeneration due to age and gross disease of the nervous system, perhaps, too, arteriosclerosis. One case was that of psychosis with mental deficiency and added to it a multiple sclerosis. Another case was paralysis agitans with typical mental depression that comes with age. Another case was of chronic chorea with psychosis in a young woman of twenty-five.

These were all very interesting and all common cases that the general practitioner sees, recognizes, and is prepared for.

The writer had the privilege of commenting on all the cases to his heart's content, but it was interesting just the same to see a well-conducted hospital whose superintendent was willing to offer its clinical material to his fellow-men and thus give them in the simplest way it could a general survey of mental disease.

A TRIBUTE TO A NURSE

The subject of this editorial is a very delicate one for the reason that there are so many kinds of nurses, and they each perhaps value their own services from their own points of view. The same changes that have come over the medical profession have reached the nursing profession; that is, the good, competent, old-fashioned nurse who was well trained fifteen or twenty years ago or even not so long ago, who came of good stock and had the elements of a nurse inherent within her, is passing and her place has been taken by the younger nurse who must not be blamed for showing her exuberance, manifesting her desire for enjoyment and her inaptitude for nursing.

Fortunately, in many of our medical schools there are hospitals for the adequate training of nurses, and if the material is good the results are equally good. They turn out a first-class,

high-grade, educated nurse, but has she always the elements and the real characteristics that go to make up a good nurse? There has been so much controversy in the last two years in our legislative halls that there is more or less feeling among the medical profession that the nurses are asking too much; that is, they expect too much, and their organizations are trying to elevate the school of nursing, as well as trying to save themselves from overdoing. They are planning for a twelve-hour system of nursing and thus requiring the sick to employ not one nurse but two because they feel that in this modern generation of nurses they should have at least twelve hours off duty. They may be right, but it means an extra and a great additional expense to the patient in the same surroundings. Consequently many people are unprepared for this additional load, yet in some instances it is clearly necessary and is borne without complaint. A very sick patient who needs almost constant attention usually needs two nurses, and this applies to those who can afford the additional expense. But among the people of moderate circumstances there is a great deal of complaint about the expense of nursing and the necessity of only employing a twelve-hour nurse and there has sprung up a number of hospitals that are attempting to train a nurse in a six-month period. Of course everyone knows that a nurse cannot be trained in so short a time, and yet an attempt has been made and the result is that many are inadequately prepared. Young women go into the nursing field and after a six-months training go out and demand twenty-five dollars a week when they are not worth ten dollars, and yet this effort has been made to meet a serious situation among the people of moderate means. But the nurse usually solves the problem herself by demanding as much as her sister nurse who has been well and adequately trained. This matter is likely to come up before the next legislature this winter and probably will be threshed out in some unfortunate manner.

Nurses may be a great comfort in a household, or they may cause the greatest upheaval in domestic affairs. The nurse that we older physicians remember is the woman of sufficient mental capacity and understanding to make herself the greatest kind of an assistant, both for the physician and the family. She has, as has been said before, a natural interest, an ability to carry on her profession; that is, she may be born a nurse. These nurses have patience which is sometimes tested to the uttermost, and yet they seem to pass over all crises without much difficul-

ty. This type of nurse is self-sacrificing. She needs rest from the twenty-four hour period if she is so employed, but she thinks of her patient and of her work. She is thoughtful to an unusual degree, looking after the comfort of her patient, bearing her duties cheerfully, smilingly, but without she has a gentle firmness that makes her work respected and she herself respected. One of her other accomplishments is her cleanliness in every way, especially as to her patient and her own person. She has courage, which she needs frequently under trying circumstances. She also has a voice that is naturally calm and yet is distinct, not harsh, and she has, too, a light step. She does not, or should not, tramp over the house with heavy tread as some of the inefficient do.

This may be an altogether optimistic view to take of the nurse, but it applies to the real nurse, and what could be said in opposition to the general run of nurses inefficiently trained who do not receive instruction but desire to impart it and who care very little about the results of their efforts—they who are disloyal to the family, disloyal to the doctor, trying to poison the mind of the patient against the medical man, is a common practice and should be met with prompt dismissal.

Then, too, young women should not be inducted into training simply because they think they can make a living out of it. They must be taught that the profession is one which requires great application, consistency of effort, loyalty to themselves and to their associates, and a cheerfulness and willingness to work.

The writer has never seen a nurse who worked herself to death, but he has seen many nurses who were conscientious and hard workers, and yet they know how to take care of themselves because they have a philosophy which has grown up with them which they adopt and they get along very much better and are eagerly sought by men who appreciate their good and sterling qualities.

DR. LOUIS BENEDICT BALDWIN

The death of Dr. Louis B. Baldwin, which occurred on Sunday, October 24, was a very great loss to the University, as well as the medical profession, not only here in Minnesota, but in the entire Northwest.

Dr. Baldwin was the kind of man that everyone liked. He had a brusque, happy, and delightful way about him and made friends wherever he went, and everybody appealed to him and he appealed to all others. He was full of

fun, enjoyed a good time, and was always the life of any gathering, whether a serious medical gathering or a dinner affair.

Dr. Baldwin, like a good many other doctors, worked at high speed and increased tension. The result was he developed high blood pressure and doubtless other things which were responsible for his death. His illness began some time ago and for at least one year he had to curtail his medical activities, and his last few weeks were clouded materially by his illness.

Dr. Baldwin was born in 1872 and graduated from the Minnesota University Medical School in 1897, so that he has been in practice over twenty-five years. He was, in his earlier years, Superintendent of the Hospital for Feeble-Minded at Grafton, North Dakota, where he spent time enough to organize the institution and put it on a sound basis. He was then made Superintendent of the North Dakota State Hospital for the Insane at Jamestown, where he spent four years in putting the State Hospital in order. Following that, in 1910, he came to Minneapolis and was Superintendent of the University Hospital since that time except for a period which he spent in the army in the World War.

During the war he was attached to the offices of the Surgeon-General of the United States Army in Washington. He entered the service in 1918 as a major and earned rapid promotion, and in 1919 was commissioned colonel in the medical reserve corps. During the war period he was placed in charge of personnel and administrative affairs in the medical corps, and it has been said of him by a great many people that he was a wonderful organizer. Part of this he had learned from his association with other medical organizations throughout the country, and his administrative ability was unquestioned.

He was not only active in state and local organizations of Minneapolis, but acted as medical director of the Nicollet Clinic from 1921 to 1924, then he was forced to resign through circumstances part of which were the condition of his health. He was active in the affairs of the American Medical Association and for two years held the presidency of the American Hospital Association. He was a member of Hennepin County Medical Society and also belonged to a Masonic lodge, so that his activities were multiple, mainly, however, as an organizer and as an administrator both in army and domestic service.

He is survived by his wife, a daughter, Helen, and his mother, all of Minneapolis; and two

brothers, Frank M., of North East, Pennsylvania, and Edward, of North Dakota.

Dr. Baldwin was the kind of man that the community will miss, and the University Hospital will suffer from his absence in the management of the institution. Dr. Baldwin stood between the State and the doctor; that is, patients were not admitted to the University Hospital if he could possibly avoid it unless they were accompanied by a letter of introduction and a history from the attending physician. He took this stand on his entrance into the hospital, and it made him a friend of the medical profession because they felt he was fair and square in dealing with the patient and the physician.

If we had more men like Dr. Baldwin, more such superintendents and organizers as he was, the medical profession would be in high favor.

MISCELLANY

MEMORIAL TO LOUIS B. BALDWIN, M.D.

BY THE FACULTY OF THE MEDICAL SCHOOL
OF THE UNIVERSITY OF MINNESOTA

Louis B. Baldwin was built of the sterling stuff that goes into the making of a true man. He was strong, earnest, faithful. He lived according to his light. A stanch friend, a fair fighter who fought for the thing he believed to be right, he was one who could yield, but who could not compromise. Defeated, he could again join hands with those who differed from him and still work on.

He was an able administrator by nature and by training. He rendered good service alike to the States of North Dakota and Minnesota. He was a loving son of his Alma Mater.

He was a loyal colleague; capable of personal sacrifice in any cause he espoused; he admired strength and candor; he was tolerant of weakness in any man.

He has done a good work and has done it well. His associates deplore his early death. They realize the emptiness of the place he has so well filled.

They share the grief of his family. They would fain offer them some effective solace. They are glad for the legacy of honor and faithfulness he has left to them,—a consoling memory of him whom they have lost.

To their Friend his fellows of the faculty give their last "Hail and Farewell,"—a fitting salute for a soul as strong and brave as his.

NEWS ITEMS

Dr. J. Ulric Joffrion has moved from Plummer to Bovey.

Dr. J. H. Hoskins, of Rolla, N. D., has moved to Chehalis, Wash.

Dr. A. O. Fasser has moved from Cheyenne, S. D., to Fremont, Neb.

Dr. Zach M. Laughlin has moved from Ft. Yates, N. D., to Kenosha, Wis.

Dr. Aloys Mahowald, of Albany, was married last month to Miss Celia Maus, of Watkins.

The contract has been let for building a six-story wing to St. Andrew's Hospital of Minneapolis.

Dr. Richard H. Lindquist, of Minneapolis, was married last week to Miss Grace Oberg, also of Minneapolis.

Dr. Roberto Alessandri, Professor of Surgery, University of Rome, gave a Mayo Foundation lecture on the evening of October 15.

Dr. William Robinson, of Sunderland, England, and his son, Dr. Victor Robinson, visited the Mayo Clinic during the week of October 10.

Dr. Louis B. Baldwin, of Minneapolis, Supt. of the University Hospital, died on Sunday, October 24, at the age of 54. Further notice of Dr. Baldwin appears in our editorial columns.

Dr. Henry Edstrom, a 1925 graduate of the Medical School of the U. of M., has joined the Crookston Clinic and will specialize in diseases of children.

Dr. Daniel J. Paradine, of Duluth, died last month at the age of 41. Dr. Paradine was a graduate of Bennett Medical College, Chicago, class of '11.

Dr. H. A. Davis, of Dickinson, N. D., has decided to retire from practice and to go to New Mexico. Dr. Davis has practiced thirty-five years in Dickinson.

Dr. F. D. Wilson, of Vernon, Texas, has become associated with Dr. Courston, at Winner, S. D. Dr. Wilson is a graduate of an Iowa medical school.

Dr. A. E. Benjamin, of Minneapolis, after attending the annual meeting of the Western Surgical Association, visited the clinics in Winnipeg and Brandon, Canada.

The annual memorial meeting of the Hennepin

County Medical Society will be held at noon on Wednesday, November 10, in the Library rooms of the Society.

The Winnebago Community Hospital was opened last month. The girls' dormitory of Parker College was bought and will be remodeled for hospital purposes.

Dr. E. F. Storke, who practiced medicine in Minneapolis a quarter of a century ago and was later engaged in literary and business lines, died in California last month at the age of 85.

Dr. Ralph S. Hedges, of Lewiston, Mont., died last month at the age of 58. Dr. Hedges was a graduate of Bellevue Medical College, class of '99, and had practiced twenty-five years in Lewiston.

Dr. Otto S. Fischer, of Houston, died last month at the age of 54. Dr. Fischer was a graduate of the Medical School of the U. of M., class '97, and had practiced several years in Houston.

Dr. George G. Eitel, of Minneapolis, was made a member of the American College of Surgeons last week, being accepted on the basis of a constituent member without the usual form of examination.

Dr. Harold H. Vandersluis, a 1926 graduate of the Medical School of the U. of M., was married last month to Miss Madeline C. Fleming, of Woodcliff Lake, N. J. He has arranged to locate in Fergus Falls.

A Yankton (S. D.) newspaper says that a physician (Dr. J. E. Treiveiler) of that city has just completed a residence at a contract cost of \$45,000. May many other South Dakota physicians do likewise.

The Black Hills Medical Society met at Hot Springs last month and were guests at the dedication of the Veterans' Bureau Tuberculosis Hospital's new building, which was an elaborate and interesting affair.

At the annual meeting of the South Dakota Public Health Association, held at Huron, S. D., last month, directors and officers were elected, and all are laymen except the vice-president, Dr. R. E. Woodworth, of Custer.

Dr. J. Walter Warren, of Faribault, died last month at the age of 45. Dr. Warren was a graduate of the University of Virginia, Department of Medicine, class of '06, and he had practiced in Faribault four years.

Dr. Paul R. Scallin, of the Peabody Clinic,

Webster, S. D., has taken over the practice of Dr. A. I. Haskell, at Clark, S. D. Dr. Haskell is going abroad for postgraduate study, and he plans to be absent for two years.

The Children's Hospital of St. Paul has just announced two gifts for its endowment fund. One gift was for \$35,000 from Mrs. W. H. Howard, Pasadena, Calif., and one of \$10,000 from Mrs. C. A. Severance, of St. Paul.

The officers elected for the current year by the Minnesota Academy of Medicine are as follows: President, Dr. Frank E. Burch, St. Paul; vice-president, Dr. John E. Hynes, Minneapolis; secretary-treasurer, Dr. Carl B. Drake, St. Paul.

Dr. Harry Cannon, of St. Paul, is a candidate for state senator from Ramsey County. Dr. Cannon has attended so many children injured in automobile accidents that he prints this legend on his campaign cards: "Drive carefully, the school kiddies are out."

Dr. Edouard Rist, of the Laennec Hospital of Paris and a noted expert on tuberculosis, visited in Minneapolis, St. Paul, and Rochester last month. His talks in the three cities were highly appreciated, and he cordially complimented the character of our tuberculosis work.

Dr. Sam Allen Weeks, a graduate of Northwestern University, class of '25, who served his internship for one year at the State Hospital, Oklahoma City, Oklahoma, has become a member of the staff of the State Hospital for the Insane, at Jamestown, N. D.

Dr. William H. Daniels, of Crookston, died last month at the age of 40. Dr. Daniels was a graduate of the School of Medicine of the University of Louisville, Ky., class of '10. He formerly practiced in Williamsburg, Iowa, and moved to Crookston in 1912, where he practiced until his death.

The Southern Minnesota Medical Association held its annual meeting in Mankato last month. The following officers were elected for the current year: President, Dr. J. H. McGuigan, Winona; vice-president, Dr. J. S. Holbrook, Mankato; secretary-treasurer, Dr. M. C. Piper, Rochester.

The Minnesota Academy of Ophthalmology and Otolaryngology holds one meeting a year in Duluth and its other monthly meetings in the Twin Cities. Its October meeting was held in Duluth, when the Duluth and Superior members presented clinics. Dr. J. L. Shellman, of St. Paul, was elected president.

The Western Surgical Association held its thirty-sixth annual meeting in Duluth on October 14 and 16. Of the twenty-nine papers presented, two were by Rochester surgeons: Dr. A. W. Adson and Dr. E. S. Judd; one by a St. Paul surgeon, Dr. Arnold Schwyzer; and one by a Minneapolis surgeon, Dr. A. C. Strachauer.

The medical societies in session within the past month have drawn probably more men from the Northwest at one time than ever before except in case of the A. M. A. meetings. There were meetings at Cleveland, at Washington, at Lake Mohonk, at Duluth, at Montreal, etc. To print the names of all who attended would take more than one page of the LANCET.

Dr. R. Bierich, Director of the Cancer Institute of Hamburg, Germany, and Dr. Archibald Leitch, Director of the Cancer Hospital Research Institute, London, visited the Mayo Clinic during the week of October 3. Dr. Bierich and Dr. Leitch came to this country to attend the International Cancer Symposium given by the American Society for the Control of Cancer at Lake Mohonk, New York, in September.

The Miner County (S. D.) District Medical Society was organized on September 7, at Howard, S. D., and received its charter from the Council of the State Association on October 15. The following are the first officers of the new society: President, Dr. L. J. Hauge, Howard; secretary-treasurer, Dr. A. G. Noble, Howard; censors, Dr. G. A. Lierle, Canova; Dr. F. M. Loring, Artesian; Dr. A. L. Amsberry, Carthage.

On Wednesday, October 13, the program of the Mayo Clinic Staff was postponed to give the time to speeches by three distinguished visitors at the Clinic. Mr. Archibald Young, Professor of Surgery, University of Glasgow; Mr. David Wilkie, Professor of Surgery, University of Edinburgh; and Mr. W. Sampson Handley, of London, were the speakers of the evening. Mr. Young and Mr. Wilkie come to this country to be the guests of the Interstate Postgraduate Assembly at the meeting in Cleveland, and Mr. Handley is one of the authorities on cancer from England who attended the International Cancer Symposium, at Lake Mohonk, New York, in September.

The Yankton (S. D.) District Medical Society met in Yankton last month and were the guests of Dr. G. S. Adams, Superintendent of the State Hospital. Dr. W. A. Jones, Editor of THE JOURNAL-LANCET and Dr. R. F. Bellaire, of Sioux City Iowa, their Secretary of the Sioux

Valley Medical Association, were guests of the Society. Dr. Jones gave a clinic on mental cases with an abundance of material furnished by the Hospital, and Dr. Bellaire gave a talk on the "Present Status of Gall-Bladder Visualization with Sodium Tetraiodophenolphthalein" illustrated with lantern slides. A pleasant feature of the meeting was the attendance of a large number of the medical students from the College of Medicine of the University of South Dakota at Vermilion.

Dr. A. H. Movius, born at Fargo on April 25, 1882, was killed in an airplane accident on October 7, 1926. Dr. Movius was a graduate of the University of Chicago, a member of the American College of Surgeons, and a Fellow of the American Medical Association. He served his internship at Lakeside Hospital, Chicago, after which he practiced for several years at Flandreau, S. D. In 1909 he moved to Jamestown, N. D., practicing in partnership with Dr. W. W. Wood until the formation of the Jamestown Clinic, in 1920, with which he has been associated since. Dr. Movius' death was the result of an airplane accident, which occurred on the outskirts of Alexandria, Minn., about 5 o'clock on October 7, the plane in which he was riding with pilot Robert Metcalf of Lakota, N. D., hitting an air pocket after it had reached an altitude of about 1,000 feet and dropping in a tail spin.

The Stutsman (N. D.) County Medical Society

The last regular meeting of the Stutsman County Medical Society was held in the offices of the Stutsman County Clinic, September 27.

Dr. J. O. Arnson, of Bismarck, addressed the Society on the subject, "Some Factors that Influence Civilization." Dr. H. M. Berg, of Jamestown, reported two cases of anilin poisoning from shoe dye.

The following doctors were present: Drs. Berg, Nolte, Johnson, Woodward, Holt, Wink, Winn, Main, of Jamestown; Dr. Carpenter, of Pingree; Dr. Buzzell, of Cleveland; Dr. Longstreth, of Kensal; Dr. Pray, of Valley City; and Dr. Arnson, of Bismarck.

The next meeting of the Society will be held November 27, at the same place.

—H. M. BERG, M.D.
Secretary

Tri-County Medical Society

The Tri-County Medical Society of North Dakota, held a meeting at New Rockford, N. D., on September 15, 1926. There were fifteen members and eight visitors in attendance, a record for a small society.

Dr. J. C. Cooper, Medical Director of Clinical Research of the American Birth Control Society, gave a very interesting lecture on "Contraceptive Methods." He gave a brief sketch of the popular

aspect of the movement and cited several reasons why this movement should receive the support of the medical profession.

Dr. John G. Lamont took up the balance of the programme. He said he was pleased to meet the Society in a double capacity: first as the Superintendent of the North Dakota Tuberculosis Sanatorium, and second as the newly appointed Secretary of the North Dakota State Medical Association.

He stated that, personally, he felt that North Dakota had no birth control problem, but that it might apply to the congested and slum districts of our great cities.

He presented some very interesting films of the chest, most of them from patients that went to the Sanatorium from our district. Films taken at stated intervals showed the effect of rest and sanatorium treatment. He also showed a number of films of patients who received artificial pneumothorax.

It impressed the Society that many of those films showed advanced stages of the disease. If we could get our tuberculosis patients to go to the institution in the incipient stage the number of cures or the arrest of the disease would be markedly increased.

At the last meeting of the Society held at Harvey, N. D., October 14, 1926, the following resolution was introduced by Dr. Chas. MacLachlan and unanimously passed:

"RESOLVED that the members of the Tri-County Medical Society of N. D., in regular session assembled, recognize with appreciation the magnanimity of purpose of Reed & Cornrick, of Jersey City, N. J., in the widespread and costly program of publicity they have embarked upon in seeking to have the public realize to a greater extent the sacrifices that have been made and are still being made, and the wealth of unpaid efforts extended by the medical profession to lengthen the lives and conserve and promote the health of the country's citizenry.

"Such voluntary and generously expressed appreciation is itself great reward for righteous accomplishment and cheers the wearied plodder. We thank you."

The Secretary was asked by the Society to transmit the above for publication to THE JOURNAL-LANCET.

At this meeting Dr. Goss, one of our members, presented a paper giving his personal experience with a bee sting.

—H. VAN DE ERVE, M.D.
Secretary.

Position Wanted

By an experienced physiotherapy technician in a physician's office. Best of references. Address 204, care of this office.

Assistantship Wanted in Minneapolis

A recent graduate desires to be associated with or to assist an active surgeon part time or full time. Address 233, care of this office.

Technician Wants Work

Have had two years experience as technician and over two years of nurse's training. Best of references. Address 223, care of this office.

Minneapolis Lease of Office to Sublet

An attractive suite of rooms in the Donaldson Building, Minneapolis will be sublet. Address 224, care of this office, or telephone Geneva 2564.

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One big Fischer Diathermy, one Morse Wave Generator, and one Hanovia Air-Cooled Quartz Lamp. At a bargain. Address 238, care of this office.

Locum Tenens Wanted

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By a young woman who has been one year in a doctor's office and who had nearly three years' training in St. Lukes Hospital in Duluth. Address 235, care of this office.

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In one of the latest down-town buildings on Nicollet Ave. Three large rooms in conjunction with a dentist. Rent, \$45 a month. Address 232, care of this office.

Physician Wanted

Carpio, North Dakota, wants a physician. A young man can do well there and will get splendid support. For full information address the First National Bank, Carpio, N. D.

Office Position Wanted

By a competent young woman of some experience and best of references. A good stenographer. Will render faithful service and begin on \$12 a week. Address 210, care of this office.

Physician Wanted

A good doctor is wanted for a town and country practice in a good South Dakota town. Easy competition. Give age and all information in first letter. Address 214, care of this office.

Locum Tenent Wanted

A young physician is wanted to take care of a general and surgical practice in a town near Minneapolis during the hunting season from November 15 to about December 1. Address 234, care of this office.

Work Wanted by Recent Graduate

I desire to become associated with a physician in active practice, either as assistant or as partner, or I will accept locum tenens work temporarily. I am a recent graduate of Iowa State University. Address 236, care of this office.

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A young woman who has recently completed a thorough course in the Swedish Hospital, and has done some relief work, will accept a moderate salary. Good references. Address 237, care of this office.

Office to Rent

An opportunity is offered to wide-awake progressive young physician to share with surgeon and dentist office suite in central down-town section of Minneapolis, first floor location. Every co-opera-

tion will be extended. Attractive terms. Atlantic 0137.

Hospital Superintendent Wanted

A nurse as superintendent of a 12-bed up-to-date hospital in a South Dakota town of 1,500 by December 1. Must be trained in major operative work. Will pay \$100 a month and maintenance. Give age, weight, and height, and send photograph. Address 230, care of this office.

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A young physician, a recent graduate of the Medical School of the University of Minnesota, who has just completed an excellent internship, is energetic, and willing to work, desires a full or part time assistantship with a busy Minneapolis physician. Address 226, care of this office.

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To locate in a South Dakota town of 600, with large surrounding territory. Nearest town with doctor nineteen miles. Young druggist will furnish new two-room office (with seven windows) and heat and light free of charge. Old doctor will retire on account of poor health. Address 205, care of this office.

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Must be available at once, to take over old established general practice. City of 8,500 population; Northern Minnesota. Leaving because of illness. No real estate. A real opportunity for a live young man. Give full information in first letter. Do not answer unless you can come at once and mean business. Address 231, care of this office.

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At Wolford, Pierce County, North Dakota. Town of about 200 population located in the northeastern part of the state, in a thriving agricultural community. Surrounding territory averages about 25 miles to neighboring towns in all directions. Physician will find co-operation and a lucrative practice. For further information write the Farmers State Bank of Wolford, N. D.

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In southeastern South Dakota. Well established, lucrative general practice; unopposed; large territory including two other towns without physicians; good roads; good collections; excellent opening to do surgery; reason for selling, son's health. Practice goes to purchaser of my combined office and residence, price \$3,500; liberal terms; money maker for a qualified man not afraid of work. Address 218, care of this office.

Electrotherapeutic Work Wanted

I would like to get in touch with some doctor, hospital, sanatorium, or clinic, who would be interested in an electrotherapeutic equipment. I have a new and complete outfit consisting of one high tension diathermy machine, one Alpine sun lamp, large 1,500 watt therapeutic light, two good massage tables, and an autocondensation pad; plenty of new linen and lots of accessories. I am an experienced graduate physiotherapy technician and can furnish the best of references. Would like to get established with some one on a salary, commission, or other basis. Address 227, care of this office.

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LENTICULAR OPACITIES*

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ST. PAUL, MINNESOTA

The subject, as announced, "Opacities of the Crystalline Lens," is one in which I have taken the keenest interest throughout my whole professional career, and I have given it most careful study, not only with the material that I have had at my disposal in many dispensaries, but I have tried faithfully* to investigate the findings of others who are engaged in practical ophthalmology. In taking up this subject I realize it is the most important one that the progressive ophthalmologists have to consider to-day. The economic importance of lens opacity is so great that any aid in the elucidation of the cause or application of successful remedies, or the possibility of producing immunity by them, is of vast importance.

Primary inflammation of the lens, or phakitis, does not occur, though secondary invasion by inflammatory cells may take place from surrounding parts. (Collins).

Recent studies by the slit lamp have given us a vast amount of valuable practical information on this subject, especially in the way of working out a more exact diagnosis; and, according to Jackson, a correct diagnosis is nine-tenths of therapeutics. It has demonstrated that opacities exist in all crystalline lenses. So all are not pathological. It is not essential, however, as it only amplifies and renders more accurate the diagnosis worked out with the ophthalmoscope and an oblique illumination.

The decrease in the acuity of vision, caused by lens opacities, cannot be correctly estimated until any refractive error that may be present has been corrected.

It is a great mistake to tell our patients who have very slight haziness of the lens, or with opacities which are not likely to progress or which may disappear with proper treatment, that they are doomed to more or less complete blindness before anything can be done. The diagnosis of this condition should never be announced without most careful investigation.

Lenses of aged people reflect so much light as to give a milky appearance which is intensified in the presence of absolute hyperopia. A correcting lens in such cases brings about normal vision, and the ophthalmoscope the usual red reflex.

The lens can be thoroughly studied only after complete dilatation of the pupil, care always being taken not to mistake small white deposits, caused by cyclitis, for those of the lens itself.

The study of the pathology of the lens is not an easy one, although many thousands have been removed. The operative process mixes up capsule, cortex, and nucleus so that we do not get a clear picture of the conditions as they exist in the living eye before removal. The introduction of the corneal microscope and slit lamp is aiding us now greatly by affording us the opportunity to study pathology of the lens in the living subject. The lens never was an easy subject for sectional study, but the slit lamp enables us to see the lens in profile exactly as though the

*Presented at the annual meeting of the Northern Minnesota Medical Association, at Crookston, Minn., August 9 and 10, 1926.

section had been made with a knife.

Cataract is not a disease, but a symptom. It is met with at all ages. It is associated with many diseases, and the possibility of dealing with it successfully in the stage of incipency is constantly becoming more apparent.

That the oculists of the country are becoming intensely interested in the importance of treating lens opacities in their early stages is made quite evident by a paper recently published by Dr. Englis Taylor, advocating such treatment. The editors of *Eye, Ear, Nose and Throat*, a popular monthly journal of large circulation, inform us that they received more inquiries from members of our specialty in regard to the merits of his remedy than anything they ever published.

There is a growing feeling among our most studious ophthalmologists, who are proud of the fact that they are usually able to relieve eye defects without interfering with function, in favor of this line of treatment and for this reason to use operative procedures as a last resort. In this they differ from the general surgeon whose surgical procedures are so frequently along the line of amputation. This is also too much the case with our intimate associates, the rhinologists and otolaryngologists.

During the past few decades our leading ophthalmologists of all nations have had their minds so completely taken up devising better technic for removing cataracts, with or without iridectomy, with or without capsule, that the causes, hygiene, and treatment of lens opacities have been sadly neglected. Operative procedures, for the removal of cataracts, have been worked up to such a high degree of excellence that if a single eye is lost in one hundred extractions, we feel quite certain that some one has blundered. The losses that do take place are nearly always due to some local or systemic condition which could not be removed.

There is a strong tendency to underrate the importance of local treatment, but when such a conservative man as Allen Greenwood, of Boston, declares that he has extensively decreased his operative cataract work by such treatment, and so great an operator as Colonel Smith urges the importance of treating incipient cataract, pronouncing the remedies used of great value, and excellent results are obtained by treatment by men of so vast experience as Dr. Weeks, of New York, who reports favorable results obtained in a thousand cases in his private practice, it indicates the vast importance of looking after this unfortunate condition in its early stages.

When you study the literature of the subject

carefully, you will find that those who condemn such treatment are those who have not used it faithfully or made a thorough study of its applications. We are all aware that opacifications of the lens clear up spontaneously, but I rather think if these cases were carefully studied it would be found that the fortunate result is associated with improved hygienic conditions resulting in better health. Eighty well-authenticated cases have been reported of spontaneous absorption of senile nuclear cataracts. Does this not encourage us to hope that a line of treatment may be worked out that will enable us to accomplish what Nature has done in these cases without our assistance?

In order to treat lens opacities intelligently we must study carefully their causes. With this subject we are not so familiar as we should be. The following is a composite picture of the etiology of lens opacities as I understand them. They are very frequently associated with systemic conditions, such as diabetes and diseases of the cardiovascular system.

The theory of Roemer that this condition is brought about by toxin in the blood, the result of defective metabolism, is quite satisfactory. This, in turn, is produced by interference of function with a number of the body organs. The toxins which produce nuclear cataract injuriously interfere with the action of the endocrine glands. Cholera, convulsions, tetanus, rickets, and pellagra are all diseases which at times are associated with the formation of cataract, and it is now generally believed that the toxin, which is characteristic of such diseases, produces changes in the protein of the lens, which results in formation of the opacities.

Cataracts are common in all tropical countries, extremely common in India. Certain classes in India use foods containing a large amount of silicates. Lenses extracted in such localities, upon being analyzed, are found to contain silicates, but they are not found in cataracts extracted in patients in this country. I am quoting from a paper of Charles Sheard, in April, 1924, *American Journal of Physiological Optics*.

Colonel Smith has called our attention to the fact that the people in India, who use the same diet as the people of England, have the same number of cataracts in proportion to the population.

Defective correcting of errors of refraction, or failure to correct them at all, is another important factor in the causation of lens changes. Most ophthalmologists of vast experience stress the importance of looking very carefully after

refractive errors, especially Lt. Col. Henry Kirkpatrick, Smith, Posey, and many others. Kirkpatrick suggests that the zonular fibres doing accommodations sometimes produce areas of uneven capsular pressure, resulting in injury to the lens. That distressing condition known as spasm of accommodation, I am convinced, is a frequent causative factor in bringing about lens opacities. That defective calcium metabolism is one of the causes of a certain form of cataract as indicated by the presence of calcium crystal found in the lens.

My own treatment of incipient opacities is very simple, but quite satisfactory on account of its efficiency. I quite agree with Dr. J. D. Sanders and many others that 60 per cent of all cases of opacities coming before us in the early stages can be checked, improved, or cleared up entirely by the proper treatment persistently applied and followed out. It consists in the use of two remedies: cyanide of mercury and adrenalin.

The vast majority of acquired cataracts that go on to complete development, requiring extraction, start in the nasal quadrant of the lens. This condition should be carefully looked after in every case of refraction correction, especially if they are approaching the presbyopic age. If the least bit of haziness is in evidence, treatment should be immediately commenced. The patient is given a solution of cyanide of mercury, 1 to 1,500, to be dropped into the eye three times a day. The cyanide of mercury stimulates the lymphatic circulation of the eye, having a favorable influence upon the lens lymph as well as that of the whole anterior section of the eyeball. I apply a stronger solution of the same remedy, rubbing it into the posterior folds of the conjunctiva, together with a solution of adrenalin. The adrenalin seems to have a powerful therapeutic effect, most favorable in these cases. Occasionally, in obstinate cases, it is necessary to inject the cyanide solution under the conjunctiva, or, as Dean recommends, it may be injected into the orbit structures. This treatment is kept up for two weeks at a time, and then the patient is directed to return in a month, when treatment will be resumed, according to lens conditions.

Of course, this is understood: that at the time of commencing the eye treatment a very careful diagnostic examination of the patient is made so as to locate any septic focus or any constitutional condition that may be a causative factor in producing the lens opacity.

With the advent of an industrial medicine era, electricity and heat have become prominent fac-

tors in the production of cataract. A number of cases have been reported lately of serious lens opacities having been produced by lightening and applied radiation. The changes in the lens produced by electricity are somewhat characteristic. The anterior part of the lens is affected primarily; this extends into deeper parts later and usually associated with burns of the face and lids.

We read in literature considerable of glass-blowers' cataract, which more accurately should be called heat-produced cataract, as smelter workers and those engaged in laundry work, and many other similar occupations, suffer eye injuries of this nature. All of the authorities seem to agree, however, that the excessive heat brings about this condition by its action on the ciliary body, thus interfering with the nutrition of the lens.

There is a great similarity in the production of the opacities of the lens and cornea, both, as a rule, being the result of disease or trauma, and the principles of treatment and results are about the same. When persistently carried out, the results are usually satisfactory. Success in treating both depends in relieving the cause first and the persistent application of local and protein treatment, associated with constitutional, whatever it may be. I have found dionin a much more effective and reliable remedy for removing nebulæ and leukomas of the cornea than for the removal of lenticular opacities. For the latter, I have discontinued its use.

The leading French ophthalmologists, especially Badal and Dor, have given medical treatment of cataract considerable attention, and report most encouraging results. Their remedies are slightly different, for the reason that each one directed his therapeutic agent to a different stage of the formation of cataract. Dor demonstrated that cataract was the result of hydration of the lens. Badal assumed that cataract was due to dehydration, which condition is simply the later stage of the former. The remedy which they recommended, calcic-alkaline, is unquestionably a very valuable therapeutic agent.

As originally pointed out by Priestly Smith, the crystalline lens continues to develop from infancy to old age, unless interfered with by some of the contracted bodily noxæ, which interfere with its normal physiological development.

And this brings to mind the production of that most interesting condition known as senile myopia or second eyesight. This is supposed to be brought about by the absorption of the cortex, thus leaving only the nucleus, which brings the rays to a focus in front of the retina requiring

the necessity of the minus instead of the plus glasses. Sometimes the cortex is absorbed only in certain meridians, thus producing the high degree of astigmatism reported by some authors.

Vogt has done an enormous amount of experimental and practical work with the slit lamp in the way of re-classifying cataracts and has made an elaborate attempt in differentiating primary from complicated cataracts. His atlas is one of the most useful contributions to modern ophthalmology. Likewise Arthur J. Bedell has done most satisfactory work along the same line, and S. R. Gifford has recently written a very instructive paper on the characteristics of congenital cataract as made out by the slit lamp. But I cannot agree with those who declare that senile cataract is not due to exogenous causes, but is simply a sign of senility, just as gray hair or the senile arch. A careful study of the histology and pathology of the crystalline lens flatly contradicts this statement.

I agree with Collins in saying that capsular cataracts are secondary; and the more we study lens opacities the more it becomes evident that they also are secondary, except the congenital cases.

Cataracts are one of the most common complications of diabetes. Unfortunately, they make their appearance during the later stages of the disease and are, possibly, not so favorably influenced by the marvelous therapeutic agents which we now have for the control of that disease.

There are two forms of diabetic cataract, one coming on rapidly in the young, the other forming slowly in the adult. Very frequently the approach of this condition is indicated by a rapid development of myopia, running as high as 7 diopters. According to Moore, this increases and decreases in proportion to the sugar output. Local treatment is useless, lens usually becoming completely opaque, demanding extraction. It is claimed by the use of insulin, lens complications are growing less frequent and operative procedures safer. Fortunately, the operative procedure for the removal of diabetic cataracts is just about as successful as that of removing any other form. At times it is impossible to make out the difference between this and so-called senile cataract.

Traumatic cataract demands our most careful attention. Small opacities, according to Fuchs, occasionally disappear or may be so located as not to interfere with the acuteness of vision and remain permanent. A very interesting and somewhat unusual result of trauma applied to

the eye is the Vossius ring. It is best seen with the ophthalmoscope. It is a round reddish ring-like formation on the anterior capsule, about the size of the pupil, consisting of blood and pigment. Sometimes the small grayish ring appears inside of this. They both usually disappear without damage.

As an illustration of one discouraging treatment of lenticular opacities is a letter by Young, published recently in the *British Journal of Ophthalmology*. He cites four cases of lens opacities of various types that disappeared without treatment.

The successful reports from the result of treatment, made by many others, are numbered by the hundreds and as high as a thousand by one of our greatest teachers.

Jackson and my old teacher, Risley, stress the good results obtainable by hygienic treatment and carefully corrected refraction. Risley devoted much time in the study of diseases of the uvea as a causative factor in producing incipient cataract. His conclusions are as follows:

Incipient opacity of the crystalline lens is a sequel of uveal disease. Its further progress can be arrested by timely and local systemic treatment.

Very encouraging reports come to us now for the treatment of cataract by means of lens protein. Experimental investigation is being carefully worked out in some of our most reliable medical centers, such as the Wilmar Institute in Baltimore. It is hoped it may become an immunizing agent. At the present time, however, the beneficial effect seems to be that of other foreign proteins. In the hands of those familiar and skillful in its use, most encouraging results have been obtained in the treatment of cataract. This good result is obtained by stimulation of the involuntary nervous system, and of the bone marrow system, and an increase of the flow of the leucocytes to the affected area with increased activity of the lymphatic system and permeability of the vascular walls. Dr. Henry H. Tyson, of New York, reports a case that seems to demonstrate this. While treating a doctor about forty years of age, who happened to have had cataracts in both eyes, for anterior uveitis, with thyroid extract and tuberculin, both cataracts absorbed. There was no history or evidence of trauma.

Those who wish to study this subject more carefully will find a very able paper on the subject in the first volume of the Transactions of the Ophthalmological Society of the United Kingdom, 1925.

Owing to the time limit I can only touch upon the subject of congenital cataracts. In a few of these a normal acuity of vision can be obtained by iridectomies or iridotomies, uncovering the clear part of the lens by so doing. When this is not possible, and it is necessary to destroy the lens, the Ziegler operation is unquestionably the one to be chosen. By a V-shaped incision through the lens, pressure on the ciliary body is avoided, tension lowered instead of increased, and rapid disappearance of lens matter obtained. This is done without iridectomy, Ziegler calling it unnecessary mutilation.

I never met with a serious complication of lens protein anaphalaxis, but this can be avoided by testing the susceptibility of the individual as to this condition.

In regard to the best procedure for immature cataracts in the aged after they have developed to an extent which seriously interferes with function: I was very much pleased to notice that Dr. Wilmar is recommending a procedure which I followed for many years, performing a preliminary iridectomy and massaging the anterior capsule of the lens, followed by extraction later. Those of you who may be interested in this will find a splendid report written by C. H. Bagley, of Baltimore, published in *Surgery, Gynecology and Obstetrics*, May, 1926.

When this class of patients have their vision reduced by an unprogressive lenticular opacity to 20/100, they can sometimes be greatly aided by the use of carefully worked out telescopic glasses, as pointed out recently by Dr. Young, of St. Louis, so as to be able to read J. No. 1.

The battle-cry of modern medicine is early treatment. This is recommended for every type of disease. Appreciating this, Mr. Englis Pollock, of the Royal Medical Society of Glasgow, in a recent number of *The London Lancet*, declares that early medical treatment for cataract should be tried in all cases. A very timely and forcible letter by Joseph C. Bloodgood will be found in a recent number of the *Journal of the American Medical Association* on this subject, pointing out the importance of its application in medical and surgical procedures.

So it becomes apparent as we carefully investigate this subject that the prevention and cure of lenticular opacities require the combined work of the physiologist, the biochemist, the general practitioner, and the oculist.

And in closing, I have only to say that the ophthalmological clinician who does not study and treat lenticular opacities is not practicing modern ophthalmology, and I fully believe that

the day is near at hand when opacification of the lens, requiring extraction, will be as rare as are trachoma, ophthalmia neonatorum, and sympathetic ophthalmia.

DISCUSSION

DR. W. W. LEWIS (St. Paul): Dr. Fulton has prepared his subject with enthusiasm and thoroughness. I have carefully studied his paper in advance, and I fear that what I have to say in discussion may take more than the allotted time.

There are many things brought out by Dr. Fulton that I am sure should be emphasized.

First: Be careful not to announce your diagnosis of cataract until you are very sure that it is there and until you have completed your dark-room examination. Many of us have been fooled by a highly sclerotic lens in the daylight, and humiliated, after announcing cataract, by the patient's reading normal and by finding no cataract in the dark room.

Second: the shock to timid, impressionable people is a serious mental trauma with terrible possibilities, even leading to melancholia. It is comparable to announcing presence of cancer. One case I have in mind resulted in almost mental oblivion for several weeks to a sensitive, introspective woman who never had cancer at all and who lived several years an unhappy, frightened existence as the result of brutal inconsideration of a surgeon. The same thing frequently results when people believe they are condemned to a life of blindness.

When you find on-coming cataract, withhold the word "cataract" and speak only of "opacities" in the lens. That will spare your patient and protect you against the criticism of others to the effect that you had missed finding the cataract. Working out the meaning of "opacities of the lens" breaks the news to them gently, without the shock they would otherwise get and, too, you can explain the matter to relatives at a convenient time.

Then, further, a carefully worked-out subjective refraction, even in the presence of a well-started cataract on-coming, may give an almost unbelievable acuity of vision. Never take for granted that vision is unalterably low until you have exhausted all effort in subjective refraction.

On the other hand, I know of nothing more difficult to be sure of making out than incipient lamellar cataract, the dust-like opacities of which are almost impossible to localize in the lens until complete dilatation of the iris permits a comparison of the clear equator with the more central cortex. Immediately antedating such finding a rather sudden on-coming myopia often may be a warning in advance and should always put us on our guard.

The advent of the slit lamp is certainly to be an important epoch in our knowledge of the media of the eye, and especially our knowledge of the lens. Its possibilities are hard to estimate.

In approaching the consideration of cataract, it seems to me very necessary to keep clearly in mind the embryology, as well as the histology and gross anatomy.

The lens, let us remember, is a companion tissue and comparable in every way to other ectodermic originating tissues; such as the hair, nails, and so on. On the other hand, do not let us group it, in this respect, with the cornea, for, in ruggedness, resistance, nutrition, and repair, they are the very

opposite, one from the other. Where the cornea is in direct contact with its vascular and lymph supply the lens gets its nutrition as indirectly and indefinitely as can be imagined.

As to the nutrition of the lens, I think the most accepted belief is that the ciliary body transmits nutrition to the lens through its ciliary processes and the suspensory ligament elongations, collectively known as the Zone of Zinn.

We can comprehend, then, what Dr. Fulton has very well brought out; namely, that the lens is a victim of environment; that any condition brought about that may influence the chemic makeup of the nutritive product of the ciliary organ will affect the nutrition and life rôle of the lens.

Approaching, then, the theory of the cause of cataract, it seems to me entirely satisfying to accept as a cause of uncomplicated cataract the theory of disturbance of nutrition rather than the theory of a toxin being the cause, whether it be the result of perverted metabolism, endocrin irregularities, chemical change in the body fluids, or what not, so long as there becomes ultimately a disturbed nutrition leading to starvation, degenerative change, or replacement of scar tissue.

Of course cataract other than the uncomplicated cataract is readily passed over; such as the traumatic cataract, whether the trauma be mechanical, thermic or electric. But even in traumatic cataract, nutrition disturbance is the direct cause, such as we have in slight contusions leading to rupture of the Zone of Zinn.

Endogenous infection, it must be admitted, is a causative factor in cataract, but indirectly so. And Meler's theory of sympathetic ophthalmia fits very well here; namely, that sensitization vulnerability, early crippling the ciliary body, soon leads to undernutrition of the lens, and any added insult to the uvea that may be already sensitized through a pre-existing poisoning from a long-standing depot of focal infection only needs a little added load to shut off the life nutrition of the lens, with resulting cataract formation.

Uncorrected errors of refraction as a contributing cause of cataract does not seem acceptable to me. Unglased people do not seem to me to be afflicted to any greater degree than others.

Dr. Fulton has spoken of the danger of applied radiation to neighboring parts, and I feel that it should be strongly emphasized, as it is a real danger to the whole optical apparatus.

Hydration and dehydration can well be included in the nutritive theory of cataract, as fluids are always a medium of transmission.

Nuclear cataract can easily be pictured as a degenerative process of undernutrition, for, as age comes on and the lens increases in size at the periphery of the cortex, the nucleus is forced farther and farther away from the source of nutrition entering the equator.

Polyopia in an on-coming cataract is a most interesting condition, and may be best explained by theorizing regional ciliary incapacity, thus unequally affecting the nutrition of corresponding sectors of the lens.

Capsular or polar cataracts are easily explained as resulting from pressure or contact sclerosis in

the delayed opening-up of media chambers. Tissues never intended to be in contact go wrong when held unduly long or tightly together.

Diabetic cataract is caused as a result of altered chemistry of metabolism, and, as Dr. Fulton has pointed out, progresses faster in the juvenile than in the senile lens. In my experience the diffuse lamellar is more frequently the form met with.

Slight opacities of traumatic origin frequently disappear in juvenile lenses or remain stationary. In my practice I once saw a boy who got the blade of his knife through the globe, cutting through the equator of the lens. For a short time a peripheral opacity existed, which ultimately disappeared entirely. While I think that opacities of the lens are comparable to scar or replacement tissues elsewhere in the body, I also think that the lens scars in the juvenile are capable, like other scar tissue in juveniles, of almost total disappearance or, at least, of minimum manifestation, where such is not probable in the adult and never possible in the senile tissues.

Now, in approaching the subject of non-surgical treatment of cataract, I feel very much hesitancy in putting forward my opinion, which is somewhat contrary to Dr. Fulton's, whose mature knowledge and observation were acknowledged foremost in our midst before I even studied ophthalmology, and whose enthusiasm on this subject is shared by many other able and prominent men in our specialty. That we should strive, as Dr. Fulton has pointed out, to relieve blindness without destroying function is most commendable, and I hope that it may be accomplished, but it is out of line with my idea of the pathology of the condition, and I cannot see where it can be made to fit with conditions as we know them in our present accepted knowledge of pathology. The tendency surely is, as Dr. Fulton emphasized, to disregard the preservation of function, and I agree with him, especially as it applies to nose and throat surgeons, where a mechanically skillful man, without a profound knowledge of pathology and sound clinical judgment, is a dangerous man.

I can agree perfectly with Dr. Fulton as to influencing causative factors producing lens opacities and halting their development, but as to the possibility of bringing about absorption and resolution of positive sclerosis in uncomplicated senile cataractous lenses, I should have to disregard my idea of the pathology of the same to accept it. Opacities due to recent hydration or dehydration may disappear upon the re-establishment of balance in body fluids, but opacities of senile cataract due to genuine sclerosis to me are comparable to the sclerosis of arteriosclerosis and are there to stay. We may see the process halted, but not resolved. In analogous change in companion tissues of ectodermic origin, namely, gray hair and brittle nails, we are not able to restore conditions to their presclerotic state even though we have ready access to them for any procedure which we may conceive of or create.

Favorably influencing nutritive activity of the anterior uvea for the lens' sake, and thus halting lenticular sclerosis by stimulating increased vascular and lymphatic interchange, is surely a most positive procedure. The beneficial hyperemia of massage is well illustrated by the natural urge of

all creatures to rub their eyes, especially when they are fatigued. Mild irritants, bringing about a vasomotor flush, have the advantage of prolonging the hyperemia, and the use of adrenalin, where vasomotor constriction followed by the flood of subsequent dilatation produces the same result, is only a different means to the same end, benefiting all ocular structures in addition to the lens.

Dr. Fulton's remarks as to handling an immature cataract as soon as vision is down suit me perfectly. Immaturity is no contraindication for extraction, and careful stroking out of the cortex with irrigation of the anterior chamber very much shortens post-operative reaction.

Preliminary iridectomy for purposes of hastening maturity I believe is done altogether too much as a regular routine by many men who fail to reserve it for selected cases. Two surgical risks where one is sufficient is, to my mind, poor surgery. I think the real value of preliminary iridectomy is in cases of anticipated trouble, such as liquid vitreous and probable expulsive hemorrhage.

My experience in lens substance sensitization has been most marked in hypermature cataracts, where the liquid lens substance seems to act as a fire-brand in precipitating violent uveal reaction.

The possibilities of desensitizing by vaccination in advance with lens substance surely are too insufficiently worked out to be depended upon as yet.

DR. C. L. OPPEGAARD (Crookston): The present-day successful treatment of lenticular opacities has given us many miraculous cures of blindness. The method of treatment, both surgical and medical, since the 18th century has been changed, improved, and modified. The trend in the treatment has been more a surgical one. We have heard this morning a discussion of treatment along medical lines with surgery used as a last resort. To the patient a good result is the important thing; to his doctor the best method in which to obtain that result is of paramount importance.

Successful treatment can be based only on a thorough knowledge of the pathology of the condition treated. The term "cataract," which we used for lenticular opacities, to-day comes from a misinterpretation of the pathology by ancient Greek and Roman physicians. They thought that the opacity was situated in front of the lens. They believed that the opacity originated from a pouring out of an opaque liquid in front of the lens. Since they imagined that the liquid fell down from above in front of the lens the term "cataracta" came into use in the Middle Ages.

As has been stated by Dr. Fulton, the nature of lens pathology has been difficult to study. If we take Dr. Fuchs' account it renders it easier for me to understand the efficiency of the treatment as described in this paper. We shall only take in consideration the opacity in the lens substance itself. In general, the opacity may start directly beneath the capsule, or at times deeper in at the border of the nucleus and the cortex. Here by separation of the lens fibers are formed clefts filled with fluid, bounded by normal, hence transparent, lens fibers. This, I believe, could represent the very early incipient stage. The fluid in the clefts may be transparent, but the spots look cloudy, due no doubt to the different refractivity of the fluid from the lens itself. Afterwards the lens fibers become cloudy

with the beginning hydration stage. The nucleus is transformed into such a resistant mass that it usually remains unchanged in the midst of the disintegrating cortex. Remembering now the pathology of the incipient stage, the introduction of active medication either in the conjunctival sac or by injection into the orbital structures has a twofold effect: (1) irritation of the tissues, and (2) the alteration in the condition of diffusion. The remote consequence of the irritation of the tissues is the passage of the natural protective substances from the blood and lymph into the tissues and spaces of the eye. The consequence of the alteration in the condition of diffusion is the production of a different osmotic pressure which acts as a stimulus to metabolism, which may aid in the absorption of the fluid in the clefts of the lens. With no changes in the lens fibers themselves the absorption could possibly take place with complete recovery of vision. The amount of improvement then would depend on the stage of the pathology at the time treatment was started.

It is then generally recognized that in cataracts not involving the capsule, the opacity does not affect the nucleus. Our treatment should then be directed to the cortex. In the incipient stage where we have clefts filled with fluid, the cause must lie in the damming back of the lymph, due to disturbance in the nutritive apparatus. Thus by active stimulation through the lymphatics by local medication and general treatment, the absorption of the opacity could take place with the absorption of the fluid. Where the stage in pathology has reached the cloudiness of the lens fibers due to fatty deposits in them I believe we can look for complete opacification.

The lens is non-vascular and receives its nutrition from adjacent structures. The anterior segment of the uvea produces the aqueous, and this is said to supply the nutrition to the lens, the dissolved matters passing through the lens capsule by diffusion. A disturbance in this function would naturally bring about changes in the lens. This is considered the general cause of lenticular opacity.

We have then three general etiological factors to consider: (1) local, (2) general, (3) etiology unknown. If we can accept the fact that lenticular opacities are caused primarily by disturbance in the nutrition of the lens, if we can accept the fact that general systemic conditions can cause opacities, we have left only that dark field of etiology unknown. Therefore only after due consideration to the local and general conditions, only after a successful invasion of that field of etiology unknown, will surgical intervention become a rarity.

The excellent discourse by Dr. Fulton has given us new courage and conviction that the treatment of lenticular opacities is not wholly and popularly a surgical one.

DR. WILLARD L. BURNAP (Fergus Falls): I deem it a great privilege to discuss this paper, not alone on account of its great interest and importance, but especially on account of the author. We are all thankful for his young old age, demonstrating, as it does, a victory and accomplishment in the evening of life.

This paper is a word of good cheer, bringing hope where in the past was depression, a lenticular opacity has been diagnosed cataract, and the pa-

tient told nothing can be done until it is ripe. Dr. Fulton has brought to our attention the fact that all opacities are not pathological and that many of those which are may be arrested. He has thus opened a new and promising field for preventive and curative medicine, emphasizing the fact that the eye does not stand alone, but is an intimate part of a complex organism, and we must look for etiology in all parts of the body.

There are great difficulties in the way of evaluating treatment for lenticular opacities. This has been well expressed by Allen Greenwood, who says, "When one considers the nature of cataracts, their propensity for various rates of progress and frequent periods of remaining stationary, it is not to be wondered at that it has been difficult to judge fairly as to the efficiency of any treatment. The intuitive sense that comes to those who have for many years treated their patients with incipient cataract, that a good deal is being accomplished, is worthless statistically, but cannot be ignored clinically.

On this basis we must attach much importance to Dr. Fulton's conclusion that 60 per cent of cataracts in early stages can be checked, improved, or cleared entirely, with proper treatment. I cannot, however, but feel that his youthful optimism dominates when he says the day is near at hand when opacification of the lens requiring extraction will be as rare as a case of trachoma or ophthalmia neonatorum.

Again quoting Greenwood: "While some still express the belief that treatment is of no value, there are probably very few to-day who send patients with vision blurred by lenticular opacities away without treatment. Accurate adjustment of correcting lenses is in itself a valuable method of retarding the development of the opacities. There are few to-day who, suspecting the presence of diabetes, do not advise treatment of the underlying cause; there are few to-day who, suspecting and finding some uveal disturbance, do not treat the underlying cause and note an improvement resulting as to local treatment. In the types most favorable a good many cases show a definite clearing in the lens as viewed with the ophthalmoscope and corresponding improvement in vision."

After listening to Dr. Fulton and reviewing the opinions of many men of large experience it seems

safe to conclude that proper treatment early and persistently applied promises much hope in a considerable percentage of cataracts.

DR. FULTON (closing): I wish to thank Dr. Lewis, Dr. Oppegaard, and Dr. Burnap for their complimentary, stimulating, and constructive criticism of my paper. It has happened with this paper, as it so frequently happens, that the discussion is more constructive than the paper itself.

Replying to Dr. Lewis, I may say that age is but a predisposing factor in producing lenticular opacities, and this is not a physiologic process, like the arching of the spine, gray hair, and brittle finger nails, but a pathologic one, and DeSchweinitz and Fuchs are of the same opinion. Many patients come before us when eighty years of age or more, and yet with perfectly clear lenses, although other evidences of age referred to by Dr. Lewis are present. The lens continues to develop from birth to the oldest age unless its nutrition is interfered with by toxins, bodily diseases, excessive heat rays, and trauma. That the lens so continues to develop has been still further demonstrated by the investigations of the slit lamp and the microscope.

In regard to refractive errors being an etiological factor, the evidence of this obtained from the very best ophthalmological literature is overwhelming. At the present time, judging from my personal experience at the dispensary and in private practice, more than one-half of the refractive work is done by non-oculists. This is another etiological factor demanding our most careful attention.

During the past ten years I have given the subject of the treatment of incipient cataract very careful attention at the St. Paul Free Dispensary, now the Wilder Dispensary, the results of treatment being most satisfactory. In not a single case during this time had both eyes developed opacification sufficiently to seriously interfere with function. In a few cases the opacification of one eye was so far developed before treatment was commenced that this went on to complete opacification.

It is just as reprehensible for the physician or oculist to fail to recognize and treat the early stages of the lens' changes as it is to fail to recognize and properly treat the early signs of that syndrome known as glaucoma.

CHEST CONDITIONS: USE OF IODIZED OIL IN DIAGNOSIS AND TREATMENT OF BRONCHIAL AFFECTIONS*

BY STUART PRITCHARD, M.D.

Battle Creek Sanitarium

BATTLE CREEK, MICHIGAN

In discussing the topic of chest conditions let us first consider bronchiectasis. We have to consider bronchiectasis as a pathologic condition, and not as a disease. It is the result of past inflammatory processes, and therefore cannot be

considered as an entity in itself. Therefore if we are going to prevent bronchiectasis we must pay more attention to the treatment of acute and subacute conditions in the bronchial tree. By the use of intratracheal injections of iodized oil, abnormal markings in the bronchial tree may be found which are otherwise undiscovered.

What is iodized oil, or lipiodol? It is not an

*Informal clinic presented at the Thirty-ninth Annual Meeting of the North Dakota State Medical Association, May 25 and 26, 1926.

emulsion or mixture but a chemical compound containing 40 per cent metallic iodine in 60 per cent oil of poppy seed. It has a specific gravity of 1.350, a neutral reaction, and has the consistency and appearance of olive oil. It is very susceptible to light, moisture, or extreme heat. If it is exposed to these different elements we have a disintegration of the compound and free iodine is liberated. When impure the substance turns a red-brown and must not be injected to visualize the bronchial tree on account of free iodine.

Forrestier, of France, worked out his procedure in 1901 after long experience and series of experiments on animals. We know that oil can be injected into the bronchial tree without much irritation, whereas if we inject water we have a severe cough reaction. The gastric secretions have no influence on the compound, but the intestinal juices being alkaline in reaction break down the compound through the action of the alkaline carbonates, and liberate free iodine. For this reason none of the compound should be swallowed when intratracheal injections are given. Iodism might result.

There are four ways of injecting the oil. One is supraglottic, by which you pour the oil through the glottis and let it run down by continuity into the bronchial tree; second, transglottic, which means you have to place your canula in the trachea as low as the vocal cords. The third method, the subglottic, is the procedure used in France, and consists of penetrating the cricothyroid membrane with a hollow curved needle and injecting the oil. You can readily see that it takes a good deal of surgical dexterity to inject either transglottically or subglottically. There is the fourth method, which is the bronchoscopic. It has the advantage of visualizing the branching of the bronchial tree and showing exactly where the pus is coming from. You can also obtain cultures from the diseased area. I think those of you who are interested in internal medicine will agree with me that the bronchoscopic method, the transglottic and subglottic methods are masterpieces in dexterity. I have been using the supraglottic method, which will be described in the slides.

What are the dangers? We have been able to make over 1,000 injections and have had no reactions, except in 3 instances where the patients developed a rash 48 to 72 hours after the injection. With these exceptions we have had no unpleasant effects. The next question is, what about aspiration pneumonia following the injection of oil in suppurative cases? I do not think it is advisable to give the oil in advanced cases with much suppuration; nor is it well to give it in cases where we have an acute infection like pneumonia or acute tuberculosis. Again, we do not give it if the patient has given us a history of hemoptysis within the past ten days. There is no reason why we cannot give it in quiescent tuberculosis where we suspect bronchial dilatations.

Thirty-one cases out of the 1,000 have been done by the other three methods. These cases were used in our investigations on the first 300 cases, and since then we have practically abandoned them and used the supraglottic.

How do you make the injection? By placing the patient on the table, with the affected side downward. Then inject the oil, gravity and aspiration conducting the oil to the terminal bronchi. If the right side is the suspicious side, then the patient can be placed in the sitting position slightly inclined to the right, and the oil will go to the corresponding base. It is not a difficult thing to do, but the literature has given us some severe warnings and made elaborate reports on how difficult it is. I fear it will not be used by roentgenologists because of the warnings in the literature of the past.

The type of case in which we find good results is that with clinical manifestations of cough over a long period of time and perhaps some fever, but the important part is that when you examine the chest you find nothing to account for the persistent cough. Then, again, even the *x*-ray with the stereo and screen fails to show any abnormality in the lung, or there are some vague findings which do not help very much, but the symptomatology is entirely out of proportion to the findings.

The cases will be shown on lantern slides. For discussion see page 531.

SEPTIC INFECTIONS OF THE LUNGS AND BRONCHI*

By D. A. STEWART, M.D.

Superintendent of the Manitoba Sanatorium

NINETTE, MANITOBA

When a patient comes complaining of cough, purulent expectoration, pain in the chest, sometimes dyspnea, fever, loss of weight and strength, or even hemoptysis; when the stethoscope may show slight abnormal chest sounds and the *x*-ray plate some abnormal shadows, what is he suffering from, tuberculosis? Not always, by any means. In about sixty out of the thousand or more brought for diagnosis or treatment to the Manitoba Sanatorium in the past two years many, or most, of these symptoms were present, and yet we think we have good reasons for considering them non-tuberculous.

Tubercle bacilli in lung tissue and bronchi bring about certain pathological changes which are followed by certain signs and symptoms. May not other infective organisms in the same tissues be expected to result in somewhat similar signs and symptoms? Indeed many of the signs and symptoms of tuberculosis, especially the later and grosser, are not due to tubercle bacilli but to mixed infection by other organisms. Other organisms enter in, and fairly frequently, without the tubercle bacilli, produce lesions and cause symptoms. Gross conditions, such as bronchiectasis and abscess and severe septic bronchitis we know are thus brought about. But besides these there are many illnesses, disabilities, debilities, recurrent infections, acute and chronic, of all degrees of troublesomeness, which may be grouped as septic—or perhaps spirochetal or mixed—infections of the lungs and bronchi. It is quite possible, indeed probable, that some one dominant or even specific organism may be the root of many of these troubles, though the manifestations seem diverse. The grouping of this series of cases is roughly according to apparent etiology as:

1. Due to carious teeth, root abscesses, pyorrhea, bad mouth conditions generally.
2. Following upon acute respiratory diseases and becoming more or less chronic.
3. Following upon general anesthetics—
 - a. for operations upon teeth, tonsils, etc.
 - b. for other operations.

GROUP 1.—Of those apparently following upon bad mouth conditions, especially upon carious

teeth and abscessed roots, the following typical cases might be cited as examples:

Miss L. J., aged 28, complained of cough and expectoration, dyspnea, pains in right lung base, loss of weight (eleven pounds), loss of strength, nervousness, all more marked in the past three months. No abnormal physical or *x*-ray signs. Teeth very bad, showing many abscesses. Good condition regained rapidly after teeth extracted.

Mrs. G., aged 24, complained of cough and profuse purulent expectoration, pain in left chest, dyspnea, and loss of weight, (seventeen pounds). She gave a history of pneumonia at the age of one year and many and various infections since. Symptoms were of long standing, but an exacerbation apparently due to chill had marked the past six months. Mouth was in horrible condition, and the root abscesses numbered ten. Practically no abnormal physical signs, and *x*-ray plates clear. Symptoms began to clear as soon as teeth were extracted.

Mr. R., aged 43, had troublesome cough, some expectoration, marked dyspnea, was weak, felt miserable. Not well for five years and quite ill for six months. Unable to work. Teeth had been bad as long as he could remember. Present condition of mouth horrible. Physical signs slight. *X*-ray plates clear. Marked improvement following a period of rest and extraction of teeth.

Mrs. B., aged 24, complained of recent hemorrhage, pain in chest, cough, purulent sputum, loss of strength and weight. Very bad tonsils had been recently removed. Rhonchi were heard throughout chest. *X*-ray plates showed a comparatively slight shadow in left base. Teeth were terrible with abscesses at nearly every root. Marked improvement followed upon extraction of teeth.

The above and something like a dozen others in this group might be summarized as follows:

GROUP 1.—Etiology, bad teeth, etc.

1. All had cough and purulent expectoration.
2. All lost weight and strength.
3. Almost all had pain in chest.
4. One had hemoptysis. Three had marked dyspnea.
5. Physical signs were slight except in the very chronic cases.
6. *X*-ray signs were usually absent or slight and then usually basal.
7. Duration was from two months to many years.
8. There were severe exacerbations due to chilling, etc.
9. Other infections were common, appendicitis, osteo-arthritis, etc.

*Presented at the Thirty-ninth Annual Meeting of the North Dakota State Medical Association, held at Minot, N. D.

10. All in this series had horrible teeth and bad mouth conditions generally.

11. Most improved when these foci were cleared up.

The doctor of the days of our youth, with black coat, side whiskers, and an all-pervading smell of drugs, was scarcely in the room before we were requested to hold out our tongues. There is much more reason for looking into the mouth of a patient now than there was then. We know much more now about evils that may arise from bad mouth conditions. Yet, strange and sad to say, the mouth is missed, or its significance missed, in many examinations. A doctor assured me the other day that the teeth of a patient who had cough and expectoration and chest pain were all right—must be, because she had never complained to him of toothache. "Why," the woman broke in, "I haven't a sound tooth in my head," and a glimpse showed in her mouth all the elements that are almost necessarily followed, sooner or later, by just what she was suffering from, septic bronchopulmonary infection.

Teeth, gums, tongue, tonsils—all are tremendously important. Here the foods are mixed with whatever the mouth may chance to contain, and so just what the mouth does contain it is the doctor's business to know. The number of filthy, neglected mouths is nothing short of appalling. Health with such cannot be expected, indeed is an utter impossibility.

And, of course, many a gold-filled mouth with bridges and plates and elaborated dentistry is simply a whited sepulchre, fair to outward appearance, but below the surface full of dead men's bones and all uncleanness.

The greatest single inlet for infections, and the greatest single spreader of infections, is the mouth.

Lungs and bronchi are a cesspool for any pus-producing conditions in the mouth, nose, and upper respiratory sinuses. Look for a cause of bronchitis first above the clavicle, especially in teeth and tonsils. When you see a very badly kept mouth look for bronchitis, and if you do not find it to-day you will tomorrow.

A cleaning up of teeth, and mouth conditions generally, is a necessary preparation for every general anesthetic.

GROUP 2.—A second group even more numerous than the first in our series, and often with the disabilities of the first added, are those whose septic chest infections apparently follow upon acute respiratory disease. Of this class the following are a few typical examples:

Mary McK., aged 9, had cough, expectoration, slight elevation of temperature and tired feeling ever since she had pertussis two years ago. There were basal shadows in *x-ray* plates. She was better when in bed, and worse, with loss of weight, when up and active. Prolonged rest in bed cleared up symptoms and shadows in *x-ray* plates also.

Willie S., aged 11, had pneumonia in childhood, most children's diseases since, and pertussis four months ago. Since the pertussis he had cough, expectoration, fever, tiredness, and loss of weight. Fingers were clubbed; abdomen tympanitic. There were marked basal physical and *x-ray* signs. Less than three months rest in bed cleared up almost all symptoms and signs.

D. A. L., aged 24, has had troublesome cough ever since he had pertussis in infancy. This chronic condition has frequent exacerbations from acute "colds." There were physical and *x-ray* signs, but comparatively slight, at lung bases. Advised to clear up and keep as clear as possible all foci of infection in upper respiratory tract.

Mrs. O. J., aged 27, has coughed ever since she had measles at the age of nine. More recently has had antrum infection, and had a pulmonary hemorrhage shortly after her child was born. Slight physical and *x-ray* signs at lung bases. Symptoms increased with fatigue and decreased with rest.

Mrs. K., aged 24, has coughed and expectorated "as long as she could remember." Had pneumonia in childhood and again at the age of fifteen. After her child was born symptoms were increased. She was debilitated and lost twenty pounds. Physical and *x-ray* signs definite in left lung base. Symptoms were lessened by rest and practically cleared up by an artificial pneumothorax.

Mrs. C., aged 45, had cough, expectoration and pain in left lung base following severe influenza. There were slight physical and *x-ray* signs in left base. Symptoms had persisted seven months when rest was advised, but cleared up in four months of partial rest.

Miss S., aged 18, had cough, expectoration, pains in chest, low weight, and tiredness for three years following severe influenza; had also a mastoid abscess. Physical and *x-ray* signs were rather gross in both lung bases. Treatment by postural drainage and rest very greatly decreased symptoms and signs, including the *x-ray* signs, in four months.

In all of the above and many other similar cases in which bronchopulmonary infections followed as sequelæ upon acute respiratory diseases there was a very definite symptom complex which might be summarized as follows:

1. All had cough and purulent expectoration, which was sometimes bad smelling.
2. Most lost weight and strength, especially at acute stages.
3. In one-third the trouble was acute; in two-thirds chronic or very chronic.
4. When acute there was usually fever and chest pain. Two had hemoptysis basal.

5. Physical and *x*-ray signs were usually definite, but slight and were always basal.
6. Half the patients were aged twenty or less.
7. Symptoms dated back in 18 cases to—
Influenza in 8 cases with seven months to eight years duration.
Pneumonia in 7 cases with six months to twenty-two years duration.
Pertussis in 3 cases with four months to twenty-two years duration.
Tonsillitis in 1 case with four months duration.
Measles in 1 case with eighteen years duration.
8. There were many exacerbations; many intercurrent infections, such as "rheumatism," appendicitis, mastoiditis, "running ear," pneumonia, etc.

GROUP 3.—In this class symptoms followed upon a general anesthetic given usually, but not always, for mouth operations, such as extraction of teeth. The essential was the abolishing of cough and pharyngeal reflexes by anesthetic with septic mouth material that could be aspirated into bronchi and lung tissues.

A.—Cases in which symptoms followed anesthesia for extraction of teeth. In all these there were cough, purulent bad-smelling expectoration, hemoptysis or blood-streaked sputum, loss of weight and strength, and fever. All showed definite signs in *x*-ray plates.

1. Mr. L. The lesion cleared up after four months rest in bed.

2. Mrs. G. Complete and lasting recovery followed artificial pneumothorax.

3. B. McT. Lesion cleared up quickly when a tooth in bronchus was removed with the aid of bronchoscope, though slight symptoms persist.

4. Mary B. Lung abscess badly handled resulted in rupture of lung and empyema. Slow recovery.

5. Mr. K. Rest and artificial pneumothorax cleared up symptoms and focus.

B.—Symptoms following anesthesia for other operations:

1. Mr. D. Hernia. Typical symptoms of lung abscess appeared in ten days. Treatment (begun three months later), rest and pneumothorax. Recovery.

2. Mr. L. Appendectomy. Typical symptoms of lung abscess appeared in twenty days. Treatment (begun two months later), rest and pneumothorax. Recovery.

Diagnosis.—These septic infections of the lungs and bronchi, both the lesser and the grosser, are very commonly confused with pulmonary

tuberculosis. This is most natural when it is considered that almost all the separate elements in their diagnosis, cough, expectoration, dyspnea, fever, râles, *x*-ray shadows, etc., are present, and typical in both. If diagnosis were a purely arithmetical process, the marking of certain symptoms as plus or present, and certain others as minus or absent, and the reaching of a conclusion by adding up the columns, differentiation would be impossible, for the columns for septic infections and for tuberculosis would show usually exactly the same pluses and minuses. But diagnosis, in this case at any rate, is more an artistic than a mathematical process. Out of the same pigments on his palette the artist may paint two very different pictures. So the septic picture when carefully studied, is quite different from the tuberculous picture, though painted with the same symptom-pigments. Both types present wide variations which may approach one another closely, and they may coexist in the same lung at the same time. Some differentiation, however, though not at all rigid nor dogmatic may be attempted.

Septic Infections	Pulmonary Tuberculosis
Cough: Much at early stages.	Little at early stage, or none.
Very much in late active stages.	Variable at all stages.
Expectoration: Profuse even in early cases.	Slight or absent in early cases.
Very profuse in late cases.	Profuse only with secondary infection.
Often bad smelling.	Bad smelling only with secondary infection.
Dyspnea: Usual and marked.	Less usual and less marked.
Consistent with good condition.	Not usual with good condition.
Can be dyspneic, but not ill.	Likely ill if dyspneic.
Related to extent of lesion chiefly.	Related to toxemia chiefly.
Hemoptysis: Less usual.	More usual.
Blood-streaked sputum more common.	Less common.
Pleurisy: Uncommon	Common
Other chest pains: Common, troublesome, basal.	Less common; slight; apical.
Lesions: Usually basal.	Usually apical.
Sounds: Musical rhonchi common.	True râles, small, crepitant.
Coarse râles in late cases.	Coarse râles when there is mixed infection.
X-ray signs: Variable, usually basal.	Variable, usually begin at apex.
Often slight, with gross symptoms.	Often gross, with slight symptoms.
Iodized oil injections useful.	
Complications: Of septic type, appendicitis, mastoid, pneumonia, etc.	Of tuberculous type, tuberculosis in other organs, etc.
Course: Very variable.	Very variable.
Chronic.	Chronic.
When chronic less curable.	When chronic more curable.
Tuberculin: No great help in differentiation.	
Examination of sputum: While a few negative reports are inconclusive, usually persevering examination "unto seventy times seven" will show bacilli if the disease is tuberculosis and there is sputum.	

It has been shown by I. Pilot and D. J. Davis (Archives Internal Medicine, September, 1924) and also by Kline and Berger (J. A. M. A.,

November 7, 1925,) that in certain lung lesions especially associated with abscess formation the dominant organisms are fusiform bacilli and spirochetes commonly resident in the mouth and upper respiratory tract. These establish a habitat in the bronchi and are of comparatively low virulence except when mixed with pyogenic organisms when their power for evil is increased.

While gross abscess and gangrene cases are comparatively infrequent lesser infections of lungs and bronchi are very common conditions. It has not been proven, though Bray and Smith, of Raybrook, have proof to advance, that the many lesser infections, as well as the few greater, are effects of these same fusiform bacilli and mouth-dwelling spirochetes. That this group is a definite clinical entity there is no doubt and the enquiry into the causal organisms opens an interesting field. It is the more interesting in that these spirochetes are said, like the pallida, to be vulnerable to arsphenamin.

In some of our later cases we have had the advantage of iodized oil injections to outline the abnormal sacculations of the bronchial tree. This new method carries us another long step in diagnosis and may perhaps be of therapeutic value also.

Treatment.—Apart from the new suggestion of treatment by arsphenamin, or the possible value of iodine in iodized oil, the first element in the treatment of these septic infections is to remove causes. Carious teeth should be pulled, not all at once, but two or three at a time, and all other possible foci in nose and sinuses tidied up. Rest, that is rest in bed, which is the only rest, is as essential in these cases as it is in tuberculosis. In slight or early infections rest alone may be sufficient to clear up symptoms and lesions. Postural drainage is of use at all stages. Vaccines have been of little use.

The special measures, if general measures fail, are mostly methods of drainage; the bronchoscope or drainage by suction; artificial pneumothorax, or drainage by compression (one of the best of methods), tube drainage if the area be localized and superficial as it seldom is, phrenectomy, thorocoplasty, and lastly, at the bitter end, lobectomy.

SUMMARY

1. Apart from gross conditions, such as severe bronchiectasis, abscess, and gangrene, infections of the lungs and bronchi, of many grades of severity, are among the commonest disease conditions met with in general practice.

2. Clinically a foul mouth with bad teeth or tonsils is a common cause. Keeping the mouth

clean is a most important measure in the prevention of disease.

3. They appear also to establish chronic lesions following acute respiratory diseases. The idea that when a child or adult is able to stand on his legs without tottering and fever has subsided, he is able for a return to work or play, is responsible for many such chronic sequelæ. A prolonged period of rest after all diseases of respiratory tract will avoid much trouble.

4. General anesthetics are responsible for many such infections of lungs and bronchi, especially when mouth conditions are bad. The cleaning up of the mouth is a necessary preparation for a general anesthetic.

5. The symptom complexes of these infections are likely to be confused with that (or those) of pulmonary tuberculosis.

6. Diagnosis, especially at the earlier stages, will be immensely helped by the injection of iodized oil.

7. It is suggested that a common mouth-dwelling spirochete and a fusiform bacillus may be specific organisms with or without the ordinary pyogenic organisms.

8. Perhaps arsphenamin may be of use. The best general measures are rest and adequate drainage.

9. Cure of these conditions is sometimes possible, sometimes not, but prevention is better than cure.

DISCUSSION OF THE TWO PRECEDING PAPERS

DR. J. G. LAMONT (San Haven): Owing to the late hour I can, perhaps, be kindest by eliminating my share of this discussion. Both papers were so complete that they need no discussion. Dr. Stewart and Dr. Pritchard are both well known to us. Dr. Stewart particularly has been neighbor to our institution for many years and friend of many in our State Medical Association. I can only thank them both for their papers.

Just one small interrogation point for those who are in general work and not seeing these cases every day. Is it not true that the forty or fifty cases that Dr. Stewart has presented, have been selected from a large number of special lung cases extending through a period of years? Most people have normal lungs, and it is the normal lung that we see most. No matter how much it is abused by cigarette inhalation and faulty hygiene it still remains what we call normal.

I wish Dr. Stewart, in the closing discussion, would bring out this point of relative frequency, that is, how many of these cases would we likely find in a village of one thousand people?

DR. W. H. LONG (Fargo): I am sure we appreciate both of these papers, particularly since both essayists emphasized the secondary nature of all these conditions. They do not all follow influenza, pneumonia, or bronchitis, but they follow many minor infections. We have to thank both essayists for

bringing this out, and also to thank Dr. Pritchard for giving us a simpler method of using lipiodol. In the literature it seems very difficult. I am sure with this method it will be much simpler and easier to every one. I am also glad he emphasized its use in the treatment. Very little has been said in the literature about its therapeutic advantages. There are a few cases where it has been helpful in healing bronchial fistula. I would like to ask Dr. Pritchard if he has had any difficulty in using it in the pleura?

We have had so many x -ray slides that we get the impression that many of these cases are not diagnosable except by x -ray. I will ask Dr. Stewart if the great majority cannot be diagnosed by a careful history and examination.

DR. PRITCHARD (closing the discussion): I was asked whether we could use lipiodol oil in the pleura. The American Medical Association calls this substance iodized oil. I have personally not used it as a therapeutic measure in tuberculous sinuses in the pleura. I have recently attended the state meeting in New Mexico and it has been tried there. No decided reports were reported. Four

cases of sinus infection have been healed in this manner in El Paso. Good results followed in decreasing the amount of discharge in contraction and stimulation in tuberculous sinuses.

DR. STEWART (closing his part of the discussion): Dr. Lamont raised a question as to the numbers of such cases. The gross cases are easily discoverable, and even these are numerous enough; but the earlier cases at all stages are, I think, very numerous and are to be found in all practices. I have had three cases brought in by one practitioner and three by another within the last two months, in each of which the septic condition of the chest explained disability that had existed for some time.

Are these diagnosable without an x -ray plate? Yes, but in these cases the x -ray is more helpful in excluding tuberculosis than any other means. With almost all the symptoms and signs of tuberculosis, instead of finding the lung packed full of tuberculous lesions, you find nothing abnormal in the plates or some small shadow at the base. They are diagnosable without x -ray plates, but plates, especially with lipiodol, give a very great advantage in diagnosis.

ACUTE EXTERNAL DISEASES OF THE EYE*

BY WILLIAM R. MURRAY, M.D.

Professor of Ophthalmology, University of Minnesota

MINNEAPOLIS, MINN.

Mr. President, Ladies and Gentlemen:—

I first wish to express my appreciation of the opportunity to appear before you at this time.

Dr. Alway has a few cases of external diseases of the eye for us to talk about. They are all cases such as we come in contact with frequently, and some of them require immediate proper treatment in order to prevent complications. They are all cases that we should be able to recognize and render proper treatment.

CASE 1. *Chronic dacryocystitis*.—This patient has had some trouble with her left eye for about two years. She gives a history of having had epiphora, which lasted for a month or two before there was any acute manifestation. At the end of that time there was an inflammatory swelling near the inner canthus of the left eye. This also caused swelling of the lid and pus escaped through the duct into the conjunctival sac. This acute attack lasted for a short time, when the inflammatory condition subsided, and the condition became the same as that which existed before the acute inflammatory process set up. This went on for a time and she then had another acute attack, with swelling at the inner canthus, swelling of the upper and lower lid, and again pus escaped. When Dr. Alway saw her two weeks ago, probing through the puncta showed no stricture or resistance as far as the nasal duct. Irrigation did not pass down into the nose, and the

pus discharge dammed back over the eyeball.

This is a case of chronic dacryocystitis, a condition which is very common and annoying, and may lead to serious results. It is a condition which should be recognized promptly, for if it is treated in the early stages it usually subsides under proper care. If it is permitted to go on untreated there will be a chronic infection of the lacrimal sac. That has occurred in this case. It is largely dormant, but there is always some secretion present. If we press over the lacrimal sac a little pus can be expressed.

These cases are very likely to give rise at intervals to acute manifestations, and we then have an acute lacrimal abscess. This patient has had at least two attacks of this nature. At times the organisms become virulent, and there is an acute inflammatory condition, with redness over the region of the sac and swelling of the sac. This usually extends to the upper and lower lids, causing acute swelling, redness, and edema. These acute attacks are usually quite painful, and the skin is very tender, red, and inflamed.

The diagnosis of chronic dacryocystitis is easily made. We usually get a history of epiphora. If we ask if they have watering of the eye constantly they may say yes, and they may say no. They may say that when they are in the wind and dust the eye waters, or if they use the eyes for close work there is watering, or tearing. They may tell you that the lids stick together a little because of the secretion which is present.

*Informal clinic presented before the Forty-fifth Annual Meeting of the South Dakota State Medical Association, at Aberdeen, May 19, 1926.

They may have a blepharitis marginalis. The annoying symptom is that the eyes water and this causes blurring of the vision.

During the course of a chronic dacryocystitis there is likely to be an acute attack, with abscess formation, at any time. These sometimes rupture through the skin, with the formation of a fistula which discharges for a time and then subsides, to be followed by another.

The treatment of the acute attack of lacrimal abscess depends somewhat upon the severity of the attack and the stage at which the patient is first seen. In the earlier stages we can sometimes restore the function by probing and syringing. If the condition is acute it is best not to interfere with a probe, for we may open up a false passage and allow the extension of the infection into the surrounding tissues, with the development of an abscess. Hot applications relieve a great deal of the pain. They hasten the formation of pus and then, if drainage cannot be obtained through the normal passage, it may be necessary to make an incision over the abscess, and drain externally. As a rule the acute inflammatory condition will then subside, but there remains the chronic dacryocystitis.

The treatment of the chronic dacryocystitis is usually local or surgical. These chronic infections usually continue for a long time, and local treatment, such as probing, enlarging the duct, syringing, and injecting antiseptic solutions, will not effect a cure. In these cases it is necessary either to remove the sac entirely, or to establish drainage from the sac into the nasal passage by making an opening from the sac into the nose itself. The operation that is most frequently done is removal of the sac, for some radical measure is usually necessary in these cases.

As to the etiology, the infection usually extends upward from the nasal passages. It may be an obstruction, it may be a sinusitis, or other form of infection in the nasal passages. Anything which causes an obstruction to the drainage of the sac may be a predisposing factor in the infection which may extend upward into the lacrimal sac. It would seem that acute or chronic pus infection of the conjunctival sac, which is more or less constantly draining down, would cause infection of the sac, but this rarely occurs. We rarely have this infection as the result of infection in the conjunctival sac. It invariably occurs from the lower or nasal end of the duct and then extends upward.

As to complications, we have one or two which are serious, and I wish to emphasize that and to emphasize the fact that a chronic dacryocysti-

tis is a serious condition. You are probably all familiar with the fact that corneal ulcer often occurs in these cases where there is an infection of the lacrimal sac. This is known as serpiginous ulcer, and is probably the most dangerous of all the ulcers with which we come in contact. It is almost always a pneumococcus infection, and we find in these cases of chronic dacryocystitis that the infection in the sac is almost always a pneumococcus. There may be an infection from some other organism, or a mixed infection, but as a rule a serpiginous ulcer is due to a pneumococcus infection. Consequently, when a patient with chronic dacryocystitis sustains a very slight injury of the cornea which causes a very small abrasion, which under ordinary circumstances might amount to very little, there is great danger that this will be followed by the development of a serpiginous ulcer. Chronic infection of the lacrimal sac is also likely to cause a chronic conjunctivitis.

CASE 2. Fistula and abscess of lower lid.—This young man has also had infection of the lacrimal sac, with drainage through the canaliculus. He has in addition a chronic conjunctivitis, largely of the lower lid, and these lacrimal conjunctivitis cases are largely confined to the lower lid. We have here another case of chronic dacryocystitis which has given rise to an acute lacrimal abscess.

I would like to illustrate by means of some lantern slides some of the points that have been brought out in the presentation of these cases.

(Slide 1.) This is a diagrammatic figure which shows the lacrimal apparatus. Here (indicating) is the lower lid; here is the upper; the conjunctival sac is here. Here (indicating) we have the punctum, another on the upper lid, and here the internal canthus. The punctum is pin-point in size, and it leads into the canaliculus, which passes on here; (indicating) and here they join and form what is known as the lacrimal sac. This passes down into the nasal duct, and has its exit beneath the inferior turbinate. When we press over this portion we express pus, which comes out through the conjunctival sac and through these little openings (indicating). If we press here we express the secretion upward and out through the canaliculi, both the upper and lower, and it emerges through the punctum and is easily detected. It is usually a sticky, mucopurulent, fairly thin secretion.

We said that in this condition the etiological factors usually are below, down here in the nasal passages (indicating). There is sometimes some obstruction of this duct here (indicating) so that drainage is interfered with and the tears that are secreted do not drain through.

(Slide 2.) This shows an acute lacrimal abscess. Here is the region of the lacrimal sac, here the upper lid and here the lower, with swelling and edema. The lids are swollen and the patient is unable to open the eyes well. There is some secretion, which has glued the lashes together. There is an acute inflammatory swelling. If we press on it we find marked tenderness and a great deal of

pain. Sometimes drainage will re-establish itself through the puncta and pus will escape. Or the abscess may break through and drain into the nasal passage, and the acute lacrimal abscess may subside. In other instances it ruptures into the skin and forms a phlegmon. In these cases it is sometimes preferable to make an incision at this point (indicating) and drain externally. As a rule this is followed by a rapid clearing up of the acute infection, and when this has subsided we have the chronic dacryocystitis. After the acute infection has subsided it is advisable to remove the sac. In some cases it is well to attempt to probe and re-establish drainage through the nostril. If you attempt to pass a probe you are very apt, during the acute stage, to form a false passage by forcing the probe through the wall of the sac, and that will permit spreading of the infection through the tissues. We do not probe in the presence of acute lacrimal abscess except in the very early stages.

(Slide 3.) This is an acute lacrimal abscess of the right lacrimal sac. You can see that the sac is swollen, the skin red, and that there is an acute inflammatory condition with a phlegmon out in the surrounding tissue. In an abscess like that it would be advisable to make an external incision and drain until the acute manifestations subside, and later remove the lacrimal sac. This is usually done by making an incision here, along the orbital margin.

CASE 3. *Corneal ulcer.*—This patient came in with a history that a week ago to-day the eye became sore and inflamed. She complained of severe pain in the right eye, with lacrimation and photophobia. Upon examination the lids were found to be negative, but the cornea showed a rather large circular ulcer in the lower segment, which was quite deep.

This is another very common external eye disease for this young woman has a corneal ulcer in the later stages. The onset was rather sudden. She first noted that the eye felt as if there was something in it. This was followed by more acute symptoms, with pain, photophobia, blurring of vision, and injection of the eyeball, the usual symptoms of corneal ulcer.

These corneal ulcers are found in young individuals, middle-aged, and elderly. They frequently occur as the result of slight traumatism. The patient may get a small foreign body in the eye, which may produce a minor injury but which may break the epithelial layer of the cornea, which is very delicate and easily abraded. A small cinder may cause an abrasion of the cornea and then infection may result. Very often it does not, and in the course of a few hours after removal of the cinder the epithelium reforms, covers over the little abrasion, and the eye recovers. If infection is present in the lacrimal sac, or the nasal passages, it may infect the small abrasion and start an ulcer. This lady says that before the development of the corneal ulcer she had an acute rhinitis and it is quite possible that this ulcer is the result of the nasal infection.

The symptoms of ulcer of the cornea are usually clear cut. First there is a little injection of the conjunctiva near the cornea. The eye is quite sensitive to light, waters easily, vision is blurred, and there is usually considerable pain. The cornea is a very sensitive structure, and when there is any little abrasion of the epithelial layer of the cornea the delicate nerve ends are exposed, and pain is quite severe. The ulcer can easily be recognized by staining with fluorescein solution. As the ulcer advances there are little gray areas of infiltration where the epithelium is broken. This sometimes spreads rapidly, sometimes within the layers of the cornea, and is followed by a scar that interferes with vision. If the corneal ulcer does not extend beneath Bowman's membrane, regeneration of the epithelium takes place and the patient usually has no bad effects. If, however, the corneal ulcer extends a little further into the corneal substance, if it goes through Bowman's membrane and involves the substantia propria of the cornea, it becomes quite serious because during the healing process of the ulcer the tissue is regenerated as connective tissue, not as transparent corneal tissue. The connective tissue is opaque tissue, and where the ulcer has penetrated beneath Bowman's membrane there will be a gray area over the former site of the ulcer. This is non-transparent and interferes with vision if the ulcer has been within the pupillary area. If it was outside the region of the pupil it may not cause much trouble, but if it is within the limits of the pupil the defective vision may be marked.

Corneal ulcers are very common. They often are of superficial type, healing occurs promptly, and the patient may have normal vision afterward. Many of the ulcers are deep and cause much interference with vision. Whether the ulcer will penetrate the corneal substance or not depends upon various factors. If the infection is a virulent one the ulcer may penetrate. Much depends upon the resistance of the patient. If the resistance is good there is much less danger of the ulcer penetrating and causing serious damage. If the patient's resistance is impaired the ulcer is much more likely to penetrate the deeper layers of the cornea.

There are various types of ulcer and various manifestations. This is a simple ulcer. It has been confined largely to the epithelial layer of the cornea, although a portion of it penetrated Bowman's membrane. Fortunately, it was located just below the pupillary area, at the lower border. There is present a small grayish area, which is not very marked and which we call a

nebula, which means a clouding of the cornea over a certain definite circumscribed area. This will probably not interfere much with vision because of its location.

The treatment of corneal ulcer is very important. It means, first, the prophylactic treatment of any corneal wound. If the patient has any type of injury involving the cornea, no matter how minor an injury, if it breaks the epithelium of the cornea that should be considered, at least potentially, as a serious eye lesion. If the infection extends and develops into a corneal ulcer there may be scar tissue formation and interference with vision.

When a patient comes with a small foreign body it should be removed in the most aseptic manner, with aseptic instruments, and the cornea should be covered and protected until the little abrasion has healed. As a rule they heal rapidly.

The treatment of corneal ulcer depends upon the type of the lesion. There are certain fundamental principles involved in the treatment of all corneal ulcers. First, cleansing with antiseptic solutions. We should use a mild antiseptic solution, such as boric acid or bichlorid of mercury 1:5,000, and irrigate the eye thoroughly. Atropin, heat, mercury ointment and an eye pad are indicated. Then, if the ulcer is well developed it is best to cauterize the ulcer rather than to wait for it to spread. The cauterization is easily done. The eye is cocaineized, and by means of a very fine applicator we make an application to the corneal ulcer with some such antiseptic as tincture of iodine, which is very effective in some types of ulcer, or we may use acetic acid, neutralizing with boric solution. We may use pure carbolic acid in the same way, washing out with boric acid solution.

In some of the more severe ulcers of the cornea it may be necessary to use the actual cautery. In the serpiginous ulcers, which spread very rapidly and deeply into the corneal substance, it is necessary to stop the advance of the ulcer as rapidly as possible, and we frequently use the actual cautery. The eye is cocaineized, and with a small cautery tip we cauterize the ulcer area, particularly the advancing zone. Then the eye is irrigated with antiseptics, such as mercurochrome, 1 per cent, bichlorid of mercury, 1:3,000, and the eye covered with a bandage. This is taken care of daily, or more frequently, until it heals.

The point I wish to emphasize in connection with corneal ulcer is that all minor injuries of the eye should be cared for very carefully, with

the utmost asepsis. The patient should never be dismissed after removal of a foreign body without careful direction as to further care. The eye should be protected against further infection and the patient should be kept under observation until you are sure no further trouble exists.

(Slide 4.) This is a section of a normal cornea. I show it to remind you of the normal histological structure of the cornea. Above (indicating) we have the upper layer, which is the epithelial layer of the cornea. A delicate, thin layer, which covers the surface of the cornea, and immediately beneath that we have Bowman's membrane. Immediately beneath Bowman's membrane we have what is known as the corneal substance proper, corneal lamellæ arranged in parallel layers with cells scattered irregularly between them. This extends to the posterior part of the cornea, and here (indicating) we have Descemet's membrane, and posterior to that we have the endothelial cells. This upper epithelial layer is the one we spoke of when we spoke of the little abrasions occurring from foreign bodies. That layer is not very tightly attached to the under layer and is easily pushed off. The ulcer may be confined entirely to the epithelial layer and not involve Bowman's membrane immediately beneath it. As long as the infection does not extend through this layer into this section (indicating) of the cornea the epithelial layer will regenerate without difficulty and no defect of vision will follow. However, if it extends down through Bowman's membrane, it will heal with connective tissue which is not transparent tissue but scar tissue, and the patient will have interference with vision.

(Slide 5.) This represents the healing of the corneal ulcer. Above we have the ulcer in its active stage. There is a crater-like formation involving the epithelial layer, and Bowman's membrane and the corneal substance proper. There is an accumulation of cells on the floor and sides of the ulcer and they are extending between the corneal layers.

When we pass through the progressive stage of the corneal ulcer we come into the stage of regression. Here you see it is beginning to clear up (indicating). The epithelial layer is beginning to regenerate and is dipping down a little bit over the edge. At about this stage there will be a deposit here where there was destruction of tissue, and this will continue until it has entirely filled up the defect in Bowman's membrane, but it will fill in with connective tissue and the patient will have a defect of vision in this portion of the cornea. If you examine the cornea of a patient and find a gray area similar to this, you may be sure that patient has had a corneal ulcer which has extended down to the corneal substance proper, and this has been filled up with connective tissue which causes the gray appearance.

(Slide 6.) Sometimes ulcers of the cornea penetrate through the entire thickness of the cornea, until there is a rupture of the lower limiting membrane, Descemet's membrane, and then we have a perforated ulcer of the cornea. This patient has had at the outer margin of the cornea a penetrating ulcer. It has gone through the superficial layers,

through the substantia propria of the cornea, through Descemet's membrane, and we have here a prolapse of the iris. When the ulcer penetrated the iris was forced out (indicating) by the escaping aqueous. This is a serious condition, and when you have a perforating ulcer of the cornea you always have a more or less serious condition, for if it is allowed to remain the iris will heal in the ulcer and will always cause an irritable eye, for there is traction on the iris which is likely to cause a chronic iritis and an irido-cyclitis, which may mean the loss of the eye. If the ulcer penetrates, and the iris is prolapsed, we must be careful to remove all of the prolapsed iris. This is a minor surgical procedure, and, if it is done before adhesions occur, the iris drops back into the anterior chamber and does not become adherent to the perforated cornea. There will be a scar but the iris will not be attached to the scar, and the probability is that the patient will not be troubled with the eye very much.

(Slide 7.) This also shows a perforated corneal ulcer and some of the late effects. Above is an ulcer of the cornea which has perforated and there is an adhesion between the cornea and the periphery of the iris. You also see an adhesion between the iris and the lens, and we have a posterior synechia, and here (indicating) some anterior synechiæ. This means a very irritable eye, one that may occasion a great deal of future trouble, and it constitutes a serious complication. Fortunately, a large proportion of ulcers of the cornea do not perforate, particularly if they receive proper attention. One type, the serpiginous, has a very marked tendency to perforate and almost always does perforate.

(Slide 8.) This slide shows a serpiginous ulcer of the cornea. Here (indicating) is the margin of the cornea, here the pupillary area. The gray area of infiltration seen here (indicating) is the corneal ulcer. This has followed a slight injury of the cornea which was followed by infection with the pneumococcus. These are very severe types of corneal ulcer. They spread, laterally, beneath the epithelium and between the layers of the cornea. They also penetrate and go through the whole thickness of the cornea.

Serpiginous ulcer is usually attended at some stage by hypopyon. This looks like pus (indicating) and when you see this hypopyon in connection with corneal ulcer you can be quite sure it is serpiginous ulcer. There are some exceptions but usually it means a serpiginous ulcer, sometimes called a hypopyon ulcer. The fluid is usually grayish-white. It is not pus but an exudate which comes from the iris and the ciliary body, and there is iritis and cyclitis present.

The treatment of serpiginous ulcers of the cornea must be very energetic if there is to be any hope of saving the eye. A slight injury of the eye in an elderly person should be cared for very carefully in order to prevent the development of such an ulcer. They usually occur in individuals beyond middle age. They are far more common in men than in women, and they usually occur in patients whose vitality is below par, and often among the farmers. A farmer may get a little chaff or grain in the eye, or be struck by a little branch or twig of a tree and have an injury of the cornea.

The treatment is the usual treatment of corneal

ulcer. The pupil should be dilated. Heat is of considerable benefit, as it increases the lymphatic circulation and helps to carry off the inflammatory process. Antiseptic solutions, mercurochrome, bichlorid of mercury 1:5,000, and, if the ulcer continues to advance, we must endeavor to stop this. This means that most of them require cauterization. Pure carbolic acid applied very carefully, particularly to the advancing margin, or the actual cautery applied in the same way give good results.

We have said that serpiginous ulcers of the cornea are caused by the pneumococcus, and we have a drug which is specific for the pneumococcus. That is ethyl hydrocuprein. Ethyl hydrocuprein is a valuable drug to use in this type of ulcer. It should be used in a 1 per cent solution at least every hour during the day in connection with other measures. However, we do not get the clinical results we would expect from the laboratory experiments, and that is because the ulcer is spreading rapidly between the layers of the cornea, and the solution which is dropped into the eyes does not come in contact with the infecting organism. However, it sterilizes the surface, sterilizes the conjunctival sac, and is a valuable drug to use, but it is not by any means specific in serpiginous ulcer.

(Slide 9.) This shows a corneal ulcer of a severe type. In the picture above (indicating) you can see the involvement of the central portion of the cornea. You can see in the anterior chamber the accumulation of the cellular infiltrate due to the exudate from the iris and the ciliary body. In the lower picture you see some of the late results of corneal ulcer that sometimes occur. The cornea has become very thin, the normal intraocular pressure has caused a bulging of the cornea, and we have a staphyloma of the cornea. The cornea has become bulged out, it is quite thin in places, and sometimes these staphylomas are very large because of the marked bulging of the cornea. These are serious conditions for they interfere with vision. They sometimes involve other coats of the eye, and there may be a scleral staphyloma as well as a corneal staphyloma.

CASE 4. *Trachoma*.—*Chronic granular conjunctivitis*.—This woman is seventy-four years of age and gives a history of having had trouble with the eyelid for many years. She has had inflammation of the lid and attacks in which the symptoms have become more acute. She now has considerable difficulty in opening the eyes. They are quite sensitive to light. There is some secretion present, a mucous secretion in the conjunctival sac, and the lids stick together a little. There is no inflammation of the cornea, and the patient's vision is quite good. If we draw the lower lid down we find considerable thickening of the conjunctiva. The normal appearance of the conjunctiva has been entirely changed. It is thickened and quite red, and as we turn the upper lid we find that the normal conjunctiva has undergone considerable change. The conjunctiva lining the upper lid in some areas shows a little atrophy, and that in itself indicates a chronic process.

This woman has a chronic granular conjunctivitis which has existed for a long time, and has involved the conjunctiva of the upper and lower lid, has extended into the deeper layers of the upper lid, and has produced some atrophy. There are

no serious complications. The cornea is not involved and the sight is quite normal. This type of chronic granular conjunctivitis sometimes persists over many years, and may lead to serious complications which in many instances cause partial loss of vision. This case will probably not progress any further. The patient's eyes will be a little sensitive at times, but her vision is good and will doubtless remain good. She has improved rapidly on such applications as silver nitrate. This is a remedy very commonly used in cases of conjunctivitis, and it is ordinarily used in 1 per cent or 2 per cent solutions, applied by means of an applicator to the everted lid and then neutralized by normal salt solution.

In cases of conjunctivitis the remedy which is used will depend upon the type of the infection. Silver nitrate is very effective in many types of conjunctivitis. In certain types that are due to a more or less specific organism we have different remedies that are more or less specific for those types. That is true in the Morax-Axenfeld conjunctivitis, which is chronic. The growth of these organisms is quickly inhibited by zinc solutions. If we find these organisms and use the zinc solution frequently we get rapid healing, for the Morax-Axenfeld bacillus is very susceptible to this drug. We use the solution in a strength of one-fourth to one-half per cent, and have the patient use it three or four times a day. In other types of conjunctivitis the silver nitrate is used in a strength of one or two per cent. The effect of this solution can be increased by allowing it to remain in contact with the conjunctiva for a considerable time. If you use a two per cent solution and allow it to remain in contact with the lid a little longer than usual you will get more effect from it than if you neutralize it immediately. Other solutions that are sometimes used in cases of conjunctivitis are mercurochrome 220 soluble, and sometimes the other silver salts, such as argyrol or protargol.

MISCELLANY

THE DEATH OF DR. AUGUST M. SARTORIUS

Medicine and pharmacy have suffered a distinct loss in the death of August Matern Sartorius, B.S., M.D., President of Reed & Carnrick, Jersey City, N. J.

At the early age of 38 Doctor Sartorius passed from the field of action at a time when he had almost reached the top rung of the ladder of professional success.

He was a graduate of Brooklyn Polytechnic Institute in 1908, and of the Medical School of Yale University in 1912. Topped off with a year of study abroad, Doctor Sartorius took into the laboratories

of Reed & Carnrick, of which he was elected Vice President in 1913, a breadth of training and a love for research not often seen. He devoted his time to studies in pluriglandular therapy with the result that he put the old house of Reed & Carnrick at the very forefront of laboratories of that type. He revived old products and presented new ones, and, by one of those peculiar circumstances which often occur in real life, at the very time of his death his laboratories were presenting to the medical profession two products containing respectively the ovarian and testicular hormones upon which he had spent years of study.

Doctor Sartorius was honor student in various institutions of learning in which he received his education and he applied those same talents to his laboratory work. His untimely death, therefore, is the more to be regretted because of his ability, as well as his desire, to discover ways and means to benefit mankind.

Doctor Sartorius was married to Miss Jessie R. Hopkins, of Brooklyn, N. Y., just before he went to France, and 3 children were born of this union. His last illness was the result of a complication of diseases which came from unusually strenuous service in the front line trenches in France where he was serving as a medical officer in the United States Army.

Besides his wife and children, Doctor Sartorius is survived by his father and mother, and two brothers.

BOOK NOTICES

ALLERGY, ASTHMA, HAY FEVER, URTICARIA AND ALLIED MANIFESTATIONS OF REACTION. By William W. Duke, Ph.B., M.D. Cloth. Price, \$5.50. Pp. 339, with 75 illustrations. St. Louis: C. V. Mosby Company, 1925.

In this volume of 339 pages the subject of Allergy is extensively discussed. The author points out how patients become hypersensitive to a large number of agents, such as smoke, pollens, vapors, drugs, and food, and to such physical agents as light, cold, etc.

Experimental and clinical data are presented.

The book is profusely illustrated and contains a splendid bibliography. The practitioner dealing with such diseases as asthma and hay fever will obtain a great deal of information from this book.

—J. A. MYERS, M.D.

A MANUAL OF NORMAL PHYSICAL SIGNS. By Wyndham B. Blanton, B.A., M.A., M.D., Richmond, Virginia, Associate in Medicine, Medical College of Virginia. The C. V. Mosby Co., Publishers, St. Louis, Mo., 1926.

The author has felt the need for a text stressing normal physical signs entirely apart from those of disease.

To accomplish this he has placed in notebook form an outline of a complete physical examination with brief descriptive notes concerning the points to be watched for. No illustrations are included.

The value of this work for the student will depend largely upon classroom instruction to amplify the skeletal arrangement.

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OUTSIDE MEDICAL MEETINGS

We refer, of course, to medical meetings outside of the Twin Cities. They seem to be in perpetual motion. The great meeting of the General Assembly at Cleveland far exceeded anything that the Assembly has had before, and those who were there report that it was astounding. They had a better audience than they have had at any other meeting of the Assembly; they had high-grade speakers, and those who attended the meeting were well repaid for their efforts. From 7 A. M. until 10:30 P. M., with an intermission of an hour or an hour and a half for luncheon and dinner, is quite a record for the average doctor, but when one knows the meeting becomes a postgraduate school of medicine, it is well worth while from every angle. True, it rained most of the time the meeting was in progress, but that is to be expected in many Eastern cities; and it takes more than rain to dampen the ardor of three or four thousand doctors.

Fortunately for those who do not attend and who are members of the Assembly, they can procure a printed record of what is done at every meeting. The book sent out this year of last year's meeting in St. Paul is a well gotten up document and contains all that was worthwhile in the whole meeting.

The meeting at Cleveland took place between the 18th and 22d of October, or five consecutive days. Following this was a general meeting of the Chicago Neurological Society, which the writer had the pleasure of attending. This took place in Chicago on the 28th of October, preceded by a dinner and a general reception of neuropsychiatrists. On October 29th and 30th a meeting of the Central Neuropsychiatric Association took place in Cincinnati and was by far the largest and best attended meeting in the newly organized association. It brought out all neurologists that could attend from the Middle West and many from the South, and naturally attracted a large number from Cincinnati itself. Prof. August Wimmer, of Copenhagen was the guest of honor. He appeared on the program three times, including a paper which was read at the banquet at the University Club on Friday evening. He is a man very attractive in manner and evidently a man who has given an enormous amount of time to his labors. His work on encephalitis is a classic, and his paper on kleptomania brought out a new angle of the kleptomaniac, namely, that in the large number of cases he reports, the majority of them had some sexual phenomena which attended each act of theft. Whether a low or high grade individual the same conditions were in evidence. He did not treat it from the Freudian view, but simply as an observer who had seen approximately forty cases.

He was obliged to leave the country soon because he was to be inaugurated as Dean of the Medical School in Denmark, and that evidently is considered a very high honor in that country and requires a man of brains and a purpose to fill it, so that his stay in this country was very short, less than a month, but he probably will come again.

The program of this meeting was a varied one, consisting of clinics, which were presented in the small auditorium of the Cincinnati General Hospital, a hospital which, by the way, stands pre-eminently in the country as a model building and is in close proximity to the medical school and the new Sisters Hospital for Children, which is a fine building. The hospital and the medical school buildings are connected by underground passage-ways which make it very easy to take patients from one building to another, and to get from one part of the grounds to the other without difficulty. The Cincinnati General Hospital is well officered and the staff is complete. The clinics there were of decided interest.

The Jewish Hospital, which stands across the street from the Cincinnati General Hospital, is

also a very large building and consists of a number of pavilions, among which is one for the study of psychology for children, a new departure evidently, for they have a new scheme for investigating children who are of peculiar types. The directors are evidently trying to demonstrate the possibilities of training children in such a manner that they will be self-sustaining and the outlook is quite hopeful although the writer does not believe that any psychologist thinks for a moment that he can change the makeup of an individual who has a bad ancestry.

The rest of the program consisted of papers. Sometimes the men who were scheduled for clinics were unable to secure the right kind of material, and they gave their talks with a lantern or with drawings, and some of them simply presented different members of the department who talked briefly on different phases of their work. For instance, the Department of Pediatrics was represented by four men, each with his special line of investigation. Some of the papers presented were very interesting; others were of the common type, ultrascientific, and it must be admitted that some of them were rather uninteresting; that is, they were presented to a body of men who would have liked something simpler, perhaps more practical. And the same condition prevailed that prevails at all medical society meetings, namely, poor speakers, some of whom talked with their chins over their sternums, looking down at their manuscripts and hoping and expecting that the vibration of their chest walls would convey the sounds across a room thirty or forty feet long. Naturally, their listeners were disappointed and heard little of what the essayist said. They saw him, saw his lips move perhaps, and occasionally could detect an understanding word. The situation sometimes seems almost hopeless, and it is very likely that the average medical man who gets up to read a paper and whose method of delivery is poor will continue to be featured at most of the medical societies. Then, too, in spite of the fact that these men to whom the speaker addresses his remarks are trained men, the man who endeavors to put over some special line of work finds few listeners who thoroughly understand him, and it is pretty well known now that the man who is able to talk simply and sensibly about things that are of common interest is the man who really attracts the crowds. They remember him, they remember what he says, but it is going to be centuries before the medical man will understand and appreciate this side of the medical society work.

The possibilities are that the Central Neuropsychiatric Association will be in the Twin Cities next year, entertained by Minneapolis and St. Paul, and St. Paul and Minneapolis, as the President of the Minnesota Neurological Society stated. This will not be a factional undertaking, but will be co-operated in by all members of the Neurological Society in both cities and it is understood that an invitation will be extended to anyone who wishes to attend the meeting. It has also been understood as a part of the rules of the Association that the cities that entertain this Association have the entire responsibility for it, that none of the officers attempt in any way to dictate the type of material or the type of program which will be offered.

Getting back to work again, the editor finds that he will probably attend three meetings, on his return; that is, one a staff meeting of a hospital, another the Hennepin County Medical Society meeting, and the third will be the Minnesota Academy of Medicine. Surely, if medical societies are of any importance, the writer should have learned much. Sometimes he doubts his ability to absorb medical instruction and he really enjoys meeting his friends and associates quite as much as he enjoys the meetings, perhaps a bit more so. And what the editor says for himself can be said by a lot of other fellows who have recently attended such meetings, as those of the American College of Surgeons, the American Railway Surgeons, the Western Surgical Associations, the National Tuberculosis Association, etc. They are time-exhausting assemblies and are expensive, but they all pay, and they disseminate knowledge as it can be spread in no other way.

THE MEDICAL EXPERT AND THE LEGAL EXPERT

The medical expert has been much discredited of late years, and not a little of his discomfiture has been due to the efforts of legal experts, especially in compelling the medical expert to fly with his wings clipped; that is, by compelling him to answer hypothetical questions designed by the lawyer to confuse the jury and discredit the medical expert.

But we want to show how the legal experts differ in matters among themselves when no effort is made on the part of anybody to deceive anybody.

Our readers will recall that during the World War the Chemical Foundation was formed to make possible in this country the manufacture of certain chemicals much used in medicine and in the industries. It was supposed to be a

wholly legal act until someone decided to refer the matter to judges (legal experts) for a guess or two.

The case was brought to the attention of the Federal courts, being first tried in the Federal District Court of Wilmington, Del. Weeks were spent in taking evidence, and the sale of patents by the Government was condemned, the Government losing at all points. But another guess was due. The case went to the Circuit Court, which upheld the District Court at every point. But, another guess was due. The case went to the Supreme Court of the United States, which also gave a unanimous decision, but it was a reversal of the unanimous decisions of the two lower courts. The legal experts did not agree!

SALE OF CHRISTMAS SEALS

The large sums of money raised by the sale of Christmas Seals for some years past have been so admirably expended, with a minimum waste of either money or effort in the accomplishment of the work done, the cutting down of deaths from tuberculosis, that physicians owe it to their communities to encourage these sales. This can be done better by medical men, than by any other class, for they can best inform the public of the work carried on by means of money so raised.

The National Tuberculosis Association is doing in all parts of the country, day in and day out, such a work as the Red Cross does in national calamities.

The county associations in the Northwest have made splendid records, but the record of this year should be the best in the history of the movement.

NEWS ITEMS

Dr. C. I. Spannare has moved from Mayville, N. D., to Fargo, N. D.

Dr. Charles R. Tompkins, of Oberon, N. D., will move to Grafton, N. D., on December 1.

Dr. J. C. Michael, of Minneapolis, has just returned from a ten months' study trip in Europe.

Dr. H. W. Grant, of St. Paul, was married last week to Miss Elizabeth Johnston, of Minneapolis.

The meeting of the Interurban Surgical Society will be held in Rochester, November 19 and 20.

Dr. Joseph Sorkners, of Hankinson, N. D., has sold his practice at that place and is now doing postgraduate work.

The next meeting of the Black Hills District Medical Society of South Dakota will be held in January at Deadwood.

Dr. A. A. Hirschfelder, Dean of the Department of Pharmacology, University of Minnesota, has returned from Europe.

Dr. H. J. Fortin, of Fargo, N. D., has gone to the Mayo Clinic as a consultant in the Section on Orthopedic Surgery.

Dr. K. Hirosaki, of the South Manchuria Railway Company, China, visited the Mayo Clinic during the first week of November.

Miss Esther Wolfe, of Big Stone City, S. D., has been appointed superintendent of the Ashton Memorial Hospital of Pipestone, Minn.

Dr. Roaue De Guchteneere, of the University of Brussels, Belgium, spent two weeks in Minneapolis in October as a guest of Dr. Clyde A. Undine.

St. John's Hospital at Rapid City, S. D., was opened last week. It is in charge of the Benedictine Sisters of Sturgis. Its equipment is very complete.

Last month Dr. J. A. Myers, of Minneapolis, was elected a director of the National Tuberculosis Association, and president of the Minnesota Public Health Association.

Dr. C. F. Brigham, of St. Cloud, and Dr. R. E. Farr, of Minneapolis, won notable victories in the Supreme Court of Minnesota in malpractice suits brought against them.

Dr. Henry Sewall, of Denver, Colorado, gave a Mayo Foundation lecture on the evening of October 26. "Visualizing medical history; the physiology of respiration" was his subject.

Dr. Oliver C. Nelson, who was formerly at the Mayo Clinic, is now associated with Dr. John R. Dibrell, Little Rock, Arkansas, in the practice of diagnosis and internal medicine.

Dr. Moses Barron, of Minneapolis, writes THE JOURNAL-LANCET from Vienna to suggest that the Rathaus of that city would make a good place for the meeting of some of our State Associations.

At the October meeting of the Grand Forks (N. D.) Medical Society, Dr. W. H. Witherstine gave an extended talk on the "Medical

Aspects of European Clinics," a subject of perennial interest.

The newly organized Minnesota Society of Internal Medicine will hold its first meeting in Rochester on November 8. There will be a program of clinics and papers. The membership of this society consists of internists throughout the state.

The Minnesota municipal health officers held a conference in St. Paul last week. In a full discussion of the salaries paid municipal health officers it was clearly demonstrated that such salaries are so low that their work is greatly handicapped.

Dr. Eric Theodore Sherping, of Wyndmere, N. D., died last month at the age of 65. Dr. Sherping was a graduate of the Minneapolis College of Physicians and Surgeons, class of '00, and had been in the Northwest for forty years as minister and physician.

The Upper Mississippi and Stearns-Benton County Medical Societies held a joint meeting at Little Falls last month. The attendance was large, and the discussions following the papers read were unusually good. The banquet added much to the social side of the meeting.

The following officers were elected by the Park Region District and County Medical Society at its annual meeting held in Fergus Falls last month: President, Dr. Peter Boyson, Pelican Rapids; vice-president, Dr. J. B. Vail, Henning; secretary and treasurer, Dr. Theo. Satersmoen, Pelican Rapids.

Dr. Charles Lee Coddington, of Virginia (Minn.), died last week at the age of 69. Dr. Coddington was a graduate of the University of Pennsylvania, class of '83, and came to Minnesota in 1888. He practiced in Duluth several years and was a member of the school and library boards of that city.

The Radiological Review published at Quincy, Ill., on January 1 will become a monthly, instead of a bi-monthly, magazine, and will be enlarged. *The Review* is an excellent publication and is the only journal in the country devoted to the progress of x-ray and radium from the standpoint of the general practitioner.

The recent vaccination against diphtheria and scarlet fever, carried on in the public schools of Minneapolis under co-operation with the Hennepin County Medical Society, and in private practice, has been the most extensive health campaign known to Minneapolis; and the whole State has been engaged in similar health cam-

paigns. Indeed the whole Northwest has likewise been so engaged.

The Minnesota Public Health Association elected the following officers at its annual meeting in St. Paul last week: President, Dr. J. A. Myers, Minneapolis; first vice-president, Dr. O. E. Locken, Crookston; second vice-president, Dr. H. S. Diehl, Minneapolis; secretary, Mrs. E. L. Youmans, Winona; executive secretary, Dr. E. A. Meyerding, St. Paul.

Marshall, Minnesota, a city of 3,000 inhabitants, has the distinction of having two women physicians, Drs. A. B. Gislason and Mary A. Fetter, the latter a surgeon. Both are graduates of the Medical School of the University of Minnesota. They conduct a hospital at Marshall and are recognized as highly qualified physicians and surgeons. "Can you beat it?"

Dr. S. W. Harrington, of the Mayo Clinic, accompanied by his wife, has gone to Europe. They will visit England, Scotland, Holland, Belgium, Germany, Austria, France and Italy, where Dr. Harrington will spend much of his time in the surgical clinics of the large cities. He will remain longest at the clinic of Sauerbruch in Munich and of von Eiselsberg in Vienna. They will sail from Italy in January and return to Rochester the latter part of the month.

The following officers were elected at the recent meeting of the Association of Resident and Ex-Resident Physicians of the Mayo Clinic: Dr. D. W. Palmer, Cincinnati, President; Dr. W. L. Estes, Bethlehem, Pennsylvania, First Vice-President; Dr. J. I. Scarborough, Little Rock, Second Vice-President; Dr. G. J. Thomas, Minneapolis, Secretary, and Dr. R. D. Mussey, Associate Secretary and Treasurer. Drs. E. S. Judd, W. F. Braasch, and M. S. Henderson were elected to the Board of Governors.

On the recommendation of the Medical Graduate Committee the Board of Governors of the Mayo Clinic has awarded the J. William White Scholarship for the Study of Surgery in Foreign Countries to Dr. Estes H. Hargis for conspicuously meritorious work during his fellowship in the Mayo Foundation. This scholarship was made possible by a gift from the late J. William White, Professor of Surgery, University of Pennsylvania; and it is open to physicians who have received the degree of Master of Science from the University of Minnesota for work done in The Mayo Foundation. Dr. Hargis is the first recipient of the award. He is a graduate of the University of Pennsylvania of the class

of 1921 and entered The Mayo Foundation as a fellow in surgery in July, 1923. The thesis which he presented in partial fulfillment of the requirements for the degree of Master of Science in Surgery at the University of Minnesota was: "Plethysmographic study of the changes in the volume of the spleen in the intact animal" and his degree was conferred in June, 1926. He will probably sail for Europe early in 1927.

Position Wanted

A 1923 Rush graduate wishes assistantship to a general practitioner in the Twin Cities. Address 244, care of this office.

Locum Tenens Work in Minneapolis Desired

I desire locum tenens work in Minneapolis for any length of time. Best of references. Address 241, care of this office.

Assistantship Wanted in Minneapolis

A recent graduate desires to be associated with or to assist an active surgeon part time or full time. Address 233, care of this office.

Instruments for Sale

One big Fischer Diathermy, one Morse Wave Generator, and one Hanovia Air-Cooled Quartz Lamp. At a bargain. Address 238, care of this office.

Office Position Wanted

By a young woman who has been one year in a doctor's office and, who had nearly three years' training in St. Luke's Hospital in Duluth. Address 235, care of this office.

Fine Office Space in Minneapolis for Rent

In one of the latest down-town buildings on Nicollet Ave. Three large rooms in conjunction with a dentist. Rent, \$45 a month. Address 232, care of this office.

Physician Wanted

Carpio, North Dakota, wants a physician. A young man can do well there and will get splendid support. For full information address the First National Bank, Carpio, N. D.

Locum Tenens Wanted

I want a physician to take care of my general practice for two or three months from the last week in December. Practice good; collections good; good town in North Dakota. Address 243, care of this office.

Work Wanted by Recent Graduate

I desire to become associated with a physician in active practice, either as assistant or as partner, or I will accept locum tenens work temporarily. I am a recent graduate of Iowa State University. Address 236, care of this office.

X-Ray and Laboratory Technician Wants Work

A young woman who has recently completed a thorough course in the Swedish Hospital, and has done some relief work, will accept a moderate salary. Good references. Address 237, care of this office.

Hospital Superintendent Wanted

A nurse as superintendent of a 12-bed up-to-date hospital in a South Dakota town of 1,500, by December 1. Must be trained in major operative work. Will pay \$100 a month and maintenance. Give age, weight, and height, and send photograph. Address 230, care of this office.

Assistantship with Minneapolis Physician Wanted

A young physician, a recent graduate of the Medical School of the University of Minnesota, who has just completed an excellent internship, is energetic, and willing to work, desires a full or part time assistantship with a busy Minneapolis physician. Address 226, care of this office.

Young Physician Wanted

Must be available at once, to take over old established general practice. City of 8,500 population; Northern Minnesota. Leaving because of illness. No real estate. A real opportunity for a live young man. Give full information in first letter. Do not answer unless you can come at once and mean business. Address 231, care of this office.

Practice for Sale

An old-established practice in North Dakota city of 15,000 population. Reason for selling, death of physician. Practice includes all office furniture and equipment and instruments for surgery and eye, ear, nose, and throat work. This practice of thirty-three years standing offers an excellent opportunity for the right man. Address 240, care of this office.

Hospital Position Wanted

Position wanted by a young woman, registered nurse in North and South Dakota, graduate of a Bismarck hospital training school. Has had four years experience in office and country practice work especially in O. B. Some experience in x-ray work and laboratory. At the present surgical nurse. Can start January first. Address 239, care of this office.

For Sale—Hospital and Practice

\$10,000 practice and \$10,000 hospital fully equipped and ready to make money from start. Business established 18 years. Scandinavian community. Collections 90 per cent. Dairy country, high school, good roads, in the lake region of North Central Minnesota, good fishing and duck hunting. 6-bed hospital with living rooms on ground floor. Modern. The hospital building alone is worth the price I'm asking for all—\$12,000 is all I ask. \$5,000 down, terms to suit. Will introduce. Am moving to California. Address 242, care of this office.

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SOME ASPECTS OF HYPERTENSION*

BY HENRY L. ULRICH, M.D.

MINNEAPOLIS, MINN.

It is within this generation of physicians that the term essential hypertension (hyperpiesia of Albutt) has emerged from its nebulous haze into a definite clinical syndrome, standing clear and unashamed in its havoc of terminal events—cardiac failure, vascular accidents, encephalomalacia and renal insufficiency. Arteriosclerosis as a cause has been properly adjudged as an effect. Only in the last decade has the vascular kidney been separated from the contracted kidney of Bright's disease. The importance of these ideas is difficult to exaggerate. As they become more common they bring out the general impression that this functional condition is on the increase.

On the heels of this clarification there comes the usual question as to the cause or causes for this clinical syndrome. I will wave aside the speculative features which are usually hinted at in this discussion, such as the stress, hurry, and habits of our modern life. Nor will I indulge in the delightful speculation on the relative merits of the antipodal racial, social, psychic and dietary differences, if these are factors, in explaining hypertension in the Occidental in contrast to its absence in the Oriental.

Your own histories, as well as O'Hare¹ in this country, and numerous writers on the Continent have called attention to the factor of inheritance (the genotypic factor) in hypertension. From 50 to 60 per cent of hypertensives give familial history. Of the paratypic factors, the psychogenic, the hormonal, and the toxogenic are

given primary importance. These acting singly or in interplay, or in interference; or their action on or in interference with the gens of inheritance can produce hypertension. We must admit that this is a backhanded explanation of hypertension. It recognizes a constitutional habitus. It merely states that clinically we have seen psychogenic hypertensives who have improved under psychotherapy. We have seen a larger group of women, in normal climacteric or precox state, who have exhibited hypertension following cessation of ovarian function, and in whom the pressure was influenced by proper hormone therapy. Again we have seen another large but less obvious group, to whose tension we have attributed a disturbance of metabolism. These clinical assumptions in nowise give us a true picture of the mechanism of the change.

There must be a physiology of hypertension (see Chart I). Briefly the vasomotor apparatus consists of a center, probably in the medulla, the nerve-fibers made up of the vegetative system, the muscles being the smooth muscle cells in the arterioles of the precapillary area. Granting the variations in activity of the center, and changes in function of the fibers, the mechanical result (pressure) lies in the function or dysfunction of the muscle cells in the precapillary areas. The allied states, such as vascular crises and Raynaud's disease, may be an expression of central or peripheral nerve dysfunction; in essential hypertension the possible change in the physiology of the individual muscle fibers must be emphasized. Of the many forms of stimuli which

*Presidential address read before the Minnesota Academy of Medicine, September 15, 1926.

lead to rise in blood pressure there appear to be three leading conditioning causes for hypertension (omitting for the moment the nephritic type), vasomotor instability, hormonal changes, and primary changes in the physiology of the muscles themselves. This changed state leads to an increased response to stimuli and a new state of tonus, so that relaxation is not commensurate with contraction. Pal,² in a discussion of the physiology of muscle of hollow organs, such as in the intestines, bladder, and blood vessels, calls attention to the importance of tonus to their function. If one empties a bladder normally the state of the muscle of the viscus is relaxed; if one empties the bladder by catheterization the muscle is not wholly relaxed; if it is emptied against resistance, the muscle of the viscus is in a state of marked contraction. Each one of these states is a tonus following its respective stimulus. In all muscles, smooth or striated, there is a kinetic contraction following a stimulus, and a state of tonus following this, which may or may not be the same as before the kinetic activity. Physiologists, in studying the function of tonus, call attention to the tonus of muscles in bivalves. After closing, the muscle holding the valves together will continue to do so for days and weeks without loss or the consuming of any energy as measured by oxygen exchange. Some analogous process must occur in the fixation of the tonus of the muscles in the precapillary areas in hypertension. Fixation of function to a perverted form is not a new concept in medicine. Auricular fibrillation is a function change in the heart muscle. Even with quinidine fixation occurs in 50 per cent. That a person can go on with this change in his physiology for ten, twenty or thirty years is as startling and puzzling as is the idea of a change in the vasomotor apparatus for an equally long period. Westphal³ has called attention to a perversion of function in his paradoxical reaction of the peripheral vessel to certain stimuli. He obtains this reaction by compressing the brachial artery for one minute, then suddenly releasing the pressure. In normal cases the capillaries as seen under the microscope are filled with blood (there is a plethora of the capillaries and peripheral vessels due to dilatation). In the hypertensive the reverse is seen. Instead of dilatation a constriction is noted. What capillaries are seen, practically disappear. The mechanical stimulus of the sudden rush of blood in the brachial and its branches induces a contraction of the capillary and precapillary areas.

In the two great classes of hypertension, that of the nephritic and the essential group, we now

know that anatomic bases are different. The cause of pressure in nephritis is not as yet definitely settled. The retention of abnormal products of metabolism has been designated as a factor. How and where they act is not clear. The compensatory contraction in the precapillary bed of the kidneys may be the explanation. Aside from the question whether nephritis is a purely renal or generalized tissue (capillary) disease the recent observations of Blackfan⁴ in acute glomerular nephritis of children is of interest. In children all the factors usually attributed as causes for hypertension can be ruled out. He noticed the rise of blood pressure always was associated with increased intracranial pressure, independent of the severity or mildness of the renal lesion (as judged by the urinary findings and the retention products in the blood). This intracranial pressure was due to edema. When the edema of the brain was relieved by changes in osmotic tension following the intravenous injection of hypertonic salt solution or the hypotonic solution of 1 per cent magnesium sulphate, the fall of the blood pressure was immediate. The appearance of the brain in acute glomerular nephritis is quite different from the appearance of the brain in tubular nephritis, the so-called nephrosis of Volhard and Fahr. In the former the convolutions are being obliterated, in the other they are preserved. Whether the absence or presence of pressure in the respective diseases is due to different types of edema, intercellular or intracellular, is not clear. The hypertension in acute glomerular nephritis of children is a compensatory affair to counteract intracranial pressure—a life-saving process. Whether this idea is applicable to the subacute or chronic forms of glomerular nephritis of adults remains to be seen.

The presence of pressor substances has been searched for in the circulating blood of hypertensives. In this country Major⁵ has observed in two cases of hypertension increased excretion of guanidin bases in the urine, with fall of blood pressure during diuresis following the use of digitalis and caffeine. Experimentally he⁶ has been able to increase blood pressure by injection of guanidin compounds in dogs. Howard and Robinowitch⁷ were unable to find guanidin bases increased in the circulating blood of hypertensives. In fact they found them more often decreased than in normals. They were able to find an increased excretion of guanidin compounds in the diuresis induced by calcium and potassium chloride in hypertensives, the rise of pressure following the injection of hormone such as adrenalin and pituitrin are old established facts. Their

presence or the finding of increased amounts of these substances in the circulation in hypertensives has never been demonstrated.

The feeding of cholesterol to rabbits by Anitschkow⁸ and others, to bring about arterial changes, such as atherosclerosis, brought out the interesting fact that it also induces prolonged rises of blood pressure. Westphal⁹ was able to corroborate this observation. He then attempted to demonstrate the action of cholesterol on the isolated arterial strip. The experiments gave beautiful demonstrations of the influence of cholesterol on the contraction of the smooth muscles in the arterial wall. The contraction of the strip immersed in Ringer's solution properly buffered with serum colloids showed a marked difference from the one immersed in a similar fluid without cholesterol. There was a stronger and more prolonged reaction to stimuli, such as adrenalin or oxygen, with an increase of tonus lasting twelve to fourteen hours. In the uncholesterinized strip the reaction was prompt and the relaxation equally as rapid.

Overton and Meyer¹⁰ have shown the significance of lipoids for cell membranes. Colloids, lecithin, and cholesterol play an important part in the physiology of the individual cells of the body. Cholesterol, outside of fat, is the only non-water-soluble substance in the body. Its relation to cell metabolism is of extreme importance. Lecithin and cholesterol are antagonistic in this connection. Lecithin is hydrophilic; cholesterol is hydrophobic. Briefly, Westphal's argument, to which he brings an array of collateral facts, is that cholesterol changes the physico-chemical phases of cell activity by modifying the cell membranes, thereby affecting the exchange of ions, gases and water. The action on the cell membranes surrounding the muscle cells in the arterioles modifies the internal activity of the cells to such an extent that their reaction to stimuli and their tonus is entirely on a different basis. He concludes that cholesterol is a tonogenic substance to smooth muscle. He observed further in arterial strip experiments the absorption of cholesterol. The cholesterol content of the arterial strips immersed in cholesterol had increased.

The French have called attention to the increased cholesterol contents in the blood of hypertensives, nephroscleroses, and pregnant women, associated with a high cholesterol content in the adrenals. Westphal¹¹ reports 71 per cent of the cases of hypertension show hypercholesterinemia. Of the remaining 29 per cent the larger number were high normals. Only a few with decompen-

sation and edema or cachexia showed a lower level than normal. Cholesterol is the only metabolite so far which has been found increased or changed from its normal level, with any degree of consistency or regularity, in hypertension. Following the experiments with arterial strip and the consistent finding of hypercholesterinemia in hypertension, Westphal feels justified in the assumption that it is a tonogenic substance and that it is in close relation to production of this functional change.

In allied states of arterial derangements, such as vascular crisis, migraine, gout, and even diabetes, hypercholesterinemia is a fairly constant finding. The hypercholesterinemia of diabetes may be on an entirely different basis than that of hypertension. Here the associated lipemia may be a factor in the flooding of the blood. There is a closely associated valence of fat and lipoids. Their physiological chemistry is not as yet wholly known. In severe anemias, fevers, and hypotension there is a hypocholesterinemia.

There are conditions in which there is hypercholesterinemia without a rise of blood pressure. The nephroses are the most striking of this group. The heaping up of cholesterol in the blood in this disease is particularly high. In fact it is used as a diagnostic procedure to separate it from the nephritides. In true nephritis there is no hypercholesterinemia. The physico-chemical states of nephrosis and hypertension are markedly different. The water imbalance, the tendency to swelling of the tissues, the shifting of the colloids of the blood, and the reduction of ions are entirely opposite to that of hypertension. In nephrosis when the edema disappears the cholesterol sinks to its normal level. This is in contrast with the hypertensives in whom the cholesterol contents decrease when edema appears. The mechanism for the rise and fall of cholesterol in the one must be opposite in the other. There is a marked difference in the fixation of the cholesterol. In hypertension it is fixed loosely to the albumin fraction; in nephrosis it is fixed to the globulin and fibrinogen fractions of the serum. The intravenous injection of an appropriate dose of adrenalin produces a marked rise of blood pressure in hypertension. In nephrosis the response to the same dose is sluggish and far below that in the normal.

Pregnancy is another state in which hypercholesterinemia is found. The resemblance of the physico-chemical shifting of the colloid, water, and salt in this condition aligns it closely in this sense to the nephroses.

The concept that abnormal manifestations of

function are due to physico-chemical derangement is not new. In hypertension there may be either changes in ionic chemistry, or hormonal imbalance, or vasomotor instability; and that any one of these, plus the heaping up of cholesterin, may produce changes in contraction and tonus of the blood vessel walls, is comparatively new. That some such variation from stability is essential before cholesterin can play its part is quite obvious. We can conclude therefore that hypertension is the result of a number of factors, vasomotor instability, hormonal changes and perverted physico-chemical processes. Abstractly speaking, then, a number of variables acting antagonistic or synergistic on a constant—that is, a changed physico-chemical state of the smooth muscles of the arterioles—produce hypertension. The treatment of the condition testifies to this most eloquently. Rest, psychotherapy, hormones, drugs, tissue extracts, change of diet, including salt, blood-letting, and lumbar puncture, all have produced changes in pressure.

Since the beginning of the year I have had examined the blood of 72 cases of hypertension for cholesterin. The findings corroborate Westphal's data. We get 74.4 per cent hyper; 23 per cent ortho; and 2.6 per cent hypo. We have used Bloor's method. Westphal estimates the cholesterin in the plasma. We have used whole blood. The problem was merely to see if there was a hypercholesterinemia. The variations and their causes are to be examined later (see charts). Arbitrarily I have divided the cases into two groups: one in which the diastolic pressure is 110 or over, the other in which the diastolic is under 110. There were forty-one in the "110 or over" group and thirty-one in the "below 110" group.

In closing let us review briefly what is known of cholesterin metabolism.¹² Its origin is in the food. It is absorbed as an ester and circulates in the blood, two-thirds as an ester, one-third as a free state. Its level in the blood is fairly constant. Its excretory organ is the liver. The

ovary, gonads and adrenals are repositories. It is found in the bile in a free state varying from 2 per cent to 6 per cent. It is changed by saprophytes in the bowels to coprosterin. Another portion is reabsorbed. It is suspected that bile acids are formed from cholesterin. While oxidative evidence is at hand it is not a source of heat. It is present everywhere in the body. There is some evidence that there is an endogenous formation. Its characteristic property is to resist mixture with water, and according to its concentration to influence the cell membranes of the body and to absorb poisons. Cholesterin balance is only obtained by means of intestinal digestion. Fat is necessary for its solution. Besides insufficiency of the liver as a source of retained cholesterin there are: mobilization of lipoids in nephrosis; ether narcosis; and infection. In pregnancy there is a rise of cholesterin in the blood with a corresponding fall in the bile. After labor there is a reversal of the curves to normal.

The high content of cholesterin in the blood of hypertensives as far as can be determined must be assumed to be due to liver insufficiency. In this connection the use of liver extracts to reduce tension has been of acute interest within the last few years. Major has been able to make a liver extract which is free from choline, histamine or peptone. MacDonald's¹³ extract contains no protein derivatives. These men so far have been satisfied with reports of blood pressure curves following the use of these extracts. How or where they act in reducing tension has not been mentioned. Their successful reports again emphasize the possible rôle the liver plays in regulation of metabolic processes. My next effort in the study of this functional condition will be in seeing what effect the injection of these extracts has on the cholesterin level of the blood; and in cases where there is hypercholesterinemia to see what effect diet, rest, and variations of ions will have on cholesterin levels.

Note: The technical procedures in this paper were done by Miss Laurene Krogh, to whom we take this opportunity to express our thanks and appreciation for co-operation. From Division "A" Medicine, General Hospital.

CHART I—TEMPORARY SCHEMA OF VASOMOTOR APPARATUS

CENTRAL BRAIN STEM

1. *Afferent Impulses*
 Pyscogenic
 Peripheral
 Afferent nerves of the aorta
 viscera and muscles

2. *Local Changes*
 Intracranial pressure
 Nutrition-arteriosclerosis
 Endocrine substances
 Tissue extracts
 Drugs

CHART I—CONTINUED

EFFERENT FIBRES
AREA OF
NEURO-MUSCULAR JUNCTION

Injury—Accidental or Surgical
Endocrine Products
Tissue Extracts

MUSCLE CELLS IN
PRECAPILLARY AREA

1. *Substances Affecting Changes in Metabolic Processes*
Tissue extracts
Endocrine substances
Drugs
2. *Substances Affecting Tonus by Changes in Phases of Cell Membrane*
Cholesterin

CHART II—31 CASES WITH HYPERTENSION DIASTOLIC BELOW 110

NAME	AGE	REMARKS	BL.PR.	CHOLESTEROL
Roxsberry	68	Possible Decomp. Hyper.	120/80	98 mg.
Urabic	67	Hypertension Decomp.	156/98	128
Urabic	67	Hypertension Compensated	156/94	200
Rogers, L.	72	Hypertension Decomp.	90/70	146
Morley	54	Auric. Fib. Comp.	160/80	153
Swenson	57	Hypertension Compensated	130/100 122/64	150
Gausman	63	Decompensated	170/100	154
Zimmerman	52	Hypertension Compensated	172/100	162
Schwartz	65	Hypertension Decomp.	180/90	165
Boardman	63	Hyper. Decomp. Diab.	160/90	167
Russel	55	Toxic Adenoma Exoph.	196/108	170
Beasley	69	Fluid in Rt. Base	160/100	170
Dover	78	Auric. Fib.	210/100	179
Wallace	60	Hyper. Decomp.	122/90	180
Swingley	53	Hypertension ?	224/108	184
Bannon	45	Decompensated	160/100	190
Hyams	48	Hypertension Decomp.	96/58 160/100	190
Johnson	49	Hypertension	180/64	191
Stephens	58	Hyper. Comp	160/88	191
Anderson, J.	45	Rheum. Fever Hyper.	192/96	195
Oniel	71	Fairly Well Compensated	188/108	198
		Compensated	150/90	198
Halverson	33	Hypertension Compensated	165/90	200
Runstrom	50	Cong. of Lobes	144/100	200
Barron	21	Pleural Effusion	160/102	200
Bloomberg	46	Hypertension	192/104	205
Stein	67	Hyp. G. B. Jaundiced	194/86	221
Slingerland	57	Diabetes, Comp.	164/102	224
Smith, Ann	67	Hypertension	172/94	232
Anderson	53	Edema of Ankles	148/100	240
Tomlinson	67	Mildly Decompensated	140/104	243
Reeves	60	Cong. at Bases	200/100	290
Joax	83	Compensated	150/100	300
(19) Hyper 61.+%		(11) Ortho 35.5%	(1) Hypo 3.%	

CHART III—CASES WITH HYPERTENSION DIASTOLIC 110 OR OVER

NAME	AGE	REMARKS	BL.PR.	CHOLESTEROL
Carpenter, H.	56	Arteriosclerosis	180/125	110 mg.
Becker	85	Hypertension Decompensated	150/110	134
Becker	85	Hyper. Early Decompensated	200/110	219
Roby	65	Hyper. Far Advanced Tbc.	210/120	140
Powers, Lucy	51	Decompensated	150/120	145
Wilson	47	Diabetic, Comp.	180/130	160
Dahlstrom	67	Hyper. No Decomp.	210/140	167
Rollins, H.	58	Hyper. Comp.	210/120	169
Bannarn	45	Mildly Decomp.	165/110	173
Nelson	67	Decompensated	175/110	181
St. John, Martin	52	Hyp. Cardiac Hyper.	166/110	184
Jones, Anna	18	Hyp. Renal Involvement	220/130	185
Heyman, Mary	52	Hyp. Lues	252/140	188
VanBuren, Geo.	48	Hypertension	228/128	191
			246/120	
Smilowitch	55	Hyp. Cardiac Hyper.	230/112	191
			230/112	220
Jacobson	63	Hyp. Not Decomp.	200/110	195
Dale, Winfred	45	Hyp. Cardiac Hyper.	166/110	196
Glackner, V.	72	Hyper. No Decomp.	170/110	197
Mawn	54	Hyp. Markedly Decomp.	194/150	200
Nelson	67	Hyp. Decomp.	168/116	200
Noble	79	Hyp. No Decomp.	220/140	200
Anderson	58	Decompensated	190/120	201
Bethel	50	Comp. Hyper.	178/110	210
Bradfield	48	Compensated	170/130	210
Farrington	73	Hyp. Decomp. Hydrothorax	185/130	210
Gacke, J.	42	Hyper. Lues	210/150	210
Gacke, J.	42	Hyper. Lues	210/150	220
Palmer	58	Diabetic, Hyper.	164/110	213
Allan	72	Hyp. Markedly Decomp.	164/120	214
Lewis	60	Hyper. Decomp.	194/114	214
Olson	63	Hyper. No Decomp.	210/130	217
Peal, Leah	46	Hyper. Parox. Tachy.	188/134	217
Murray	67	Effusion at Right Base	160/120	222
Solberg, Elida	63	Hyper. Cerebral Hem.	196/128	227
Thompson	66	Hyper. Congest. of Bases	260/160	230
Gilmore	70	Hyper. Decomp.	246/134	240
Biernal	53	Early Decomp.	216/110	260
Biernal	53	Mildly Decomp.	216/110	242
Olson	65	Hyp. Early Decomp.	220/132	244
Lukosky	43	Hyper. Cardiac Asthma	160/110	256
Somers, J.	45	Hyper. No Decomp.		
		Renal Involvement	230/160	250
Cloud, Della	42	Hyp. Mild Decomp.	242/132	254
Ingraham, J.	42	Decompensated	184/142	333
Weik	54	Diabetic. Hyper.	184/114	400
(34) Hyper. 80.9%		(7) Ortho 17%		(1) Hypo 2%

CHART IV—NON-HYPERTENSIVE CASES

GROUP OF NORMALS:		B.G.	180 mg.		
20-30 yrs. old		A.G.	161 mg.		
		E.C.	170 mg.		
		V.A.	165 mg.		
		L.K.	180 mg.		
		V.S.	150 mg.		
		R.B.	135 mg.		
		E.S.	160 mg.		
NAME	AGE	REMARKS	BL.PR.	CHOLESTEROL	
Tibbets	56	A.I.	190/68	139 mg.	
Hunezok, Jennie	38	Rheumatic Fever		144	
Fletcher	25	A.S.	118/42	150	
Hicks	69	Hemiplegia	185/75	162	
Oseng	24	M.I.	118/88	170	
Campbell	18	Pleural Effusion	116/68	170	
Nelson	30	A.I.	140/50	175	
Deinhardt	60	A.I.	140/50	185	
Elliot	53	Aortic I.	128/76	186	
Down	15	M.I.	122/76	190	
Mattock	63	Luetic Aortitis	134/66	195	
Thompson	22	Diabetic		198	
Kroff	56	A.S.	104/78	214	
Dragon	19	Diabetic		225-28-30	
Kraft	62	Aortic Aneurism, A.I.	152/85	255	
Halverson	37	S. Anemia; Cancer of Liver	140/84	476	
Johnson, Alex	63	P.A.	86/40	65	
Johnson, Alex	81	P.A.	110/50	66	
Lewis, Mary	62	P.A.		71	
VanLannen	56	P.A.		76	

*A.S.—Aortic Stenosis; A.I.—Aortic Insufficiency; M.I.—Mitral Insufficiency; S.A.— Secondary Anemia; P.A.—Pernicious Anemia.

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BOYS AND GIRLS' SOUTH DAKOTA FARM CLUB CLINIC

BY CLARA E. HAYES, M.D.

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WAUBAY, SOUTH DAKOTA

The fourth annual clinic for the Boys' and Girls' Farm Club of South Dakota was held at the State Fair this year. The clinic was conducted by the Division of Child Hygiene for the Extension Service of the State College of Agriculture under the auspices of the State Board of Health and the State Medical Association.

There were 168 examinations in 1923, 186 in 1924, 215 in 1925, and 306 this year. Twenty-one per cent of the boys and girls examined in 1923, 43.5 per cent of those in 1924 and 11 per cent of those examined in 1925 have reported corrections of physical defects found at the clinic. Not all reports for 1925 have been received.

This year we secured a history of disease and health habits for every club member. The blank was sent to every member and was filled out at home and brought personally to the clinic registrars at the Fair. These histories, a summary of which follows, show that a very large number of the children have suffered from communicable diseases, especially diphtheria, 4.6 per cent, and smallpox, 13.5 per cent, to which definite immunization is possible. Only 35.6 per cent of the total number have been vaccinated against smallpox, 4.6 per cent against diphtheria, and 1.4 per cent against typhoid fever.

Thirty-one and eight-tenths per cent of the boys and 2.8 per cent of the girls, making 18.6 per cent of the total, never clean their teeth. The examination records show that 72.6 per cent of the whole number have stained teeth. Twenty-seven and four-tenths per cent have not visited a dentist during the past two years; and, judging from the large number of missing permanent teeth and decayed teeth alone, it is apparent that

many have never had dental attention.

Two per cent of the total bathe less often than once weekly and 68 per cent bathe but once a week. Thirty per cent have two or more baths a week.

The records of hours of sleep, sleep with windows open winter and summer, hours spent out of doors, fruit and vegetables eaten daily, and attention to regular bowel movement are fairly good for both boys and girls. Forty-one and one-tenth per cent drink less than six glasses of water daily. Twenty-two per cent drink no milk, and these are practically all rural children. Thirty-eight and two-tenths per cent drink less than three glasses, and 38.8 per cent drink three or more glasses, of milk daily.

Nineteen and nine-tenths per cent of the total number were examined at the clinic last year. The examinations this year show that 31 per cent of that number have had corrections of defects or marked improvement in their general physical condition since last year's clinic.

SUMMARY OF DISEASE HISTORY AND HEALTH HABITS

Total number examined 306

	Number of boys examined 167		Number of girls examined 139		
	Number of boys	Percentage of boys	Number of girls	Percentage of girls	Percentage of total
HISTORY OF:					
Tuberculosis in family	5	3. %	2	1.4%	2.3%
Chicken pox	88	52.6%	92	66.3%	58.8%
Diphtheria	10	6.0%	4	2.8%	4.6%
Growing pains	12	7.2%	10	7.2%	7.2%
Running ear	10	6.0%	13	9.4%	7.5%
Heart disease	2	1.2%	2	1.4%	1.3%
Infantile paralysis	4	2.4%	0		1.3%
Influenza	42	25.2%	54	38.8%	31.4%
Measles	84	50.2%	99	71.2%	59.8%
Mumps	66	39.6%	52	37.4%	38.6%
Pleurisy	2	1.2%	0		0.7%
Rheumatism	4	2.4%	1	0.7%	1.6%
Scarlet fever	26	15.6%	23	16.5%	16.0%
Skin disease	10	6.0%	4	2.8%	4.6%
St. Vitus dance	1	0.6%	0		0.3%
Smallpox	27	16.2%	19	13.5%	15.0%
Tonsillitis	22	13.2%	24	17.2%	15.0%
Typhoid fever	1	0.6%	1	0.7%	0.7%
Tuberculosis	0		2	1.4%	0.7%
Whooping cough	81	48.4%	102	71.4%	59.8%
IMMUNIZATION AGAINST:					
Smallpox	56	33.6%	53	38.1%	35.6%
Typhoid fever	4	2.4%	2	1.4%	2.0%
Diphtheria	9	5.4%	5	3.5%	4.6%

VISITS TO DENTIST:

During last two years					
None	54	32.4%	30	21.6%	27.4%
One	45	27.0%	38	27.4%	27.1%
Two	25	15.0%	24	17.2%	16.0%
More than two	23	13.8%	40	28.8%	20.6%
No report	20	12.0%	27	19.5%	15.4%

BATHS TAKEN WEEKLY:

Less than one	5	3.0%	1	0.7%	2.0%
One	130	78.0%	78	56.0%	68.0%
Two	25	15.0%	52	37.4%	25.2%
Three	4	2.4%	5	3.5%	2.9%
Daily	0		3	2.1%	1.0%
No report	3	1.8%	0		1.0%

NUMBER WHO BRUSH TEETH:

Not at all	53	31.8%	4	2.8%	18.6%
Less than daily	38	22.8%	10	7.2%	15.7%
Once daily	58	34.8%	83	58.1%	46.1%
Twice daily	10	6.0%	40	28.8%	16.3%
No report	8	4.8%	2	1.4%	3.3%

SLEEP:

Eight hours	40	24.0%	25	18.0%	21.2%
Nine hours	85	51.0%	46	33.1%	42.8%
Ten hours	35	20.8%	48	34.5%	27.1%
Eleven hours	4	2.4%	17	12.2%	6.8%
No report	3	1.8%	3	2.1%	2.0%

SLEEP WITH WINDOWS OPEN
WINTER AND SUMMER:

Yes	147	88.2%	129	91.4%	90.1%
No	15	9.0%	5	3.5%	6.5%
No report	5	3.0%	3	2.1%	2.6%

OUT OF DOORS DAILY:

One hour	1	.6%	7	5.0%	2.6%
Two hours	0		16	11.5%	5.2%
Three hours	0		21	15.0%	6.9%
Four hours	5	3.0%	37	26.8%	13.7%
More than four hours	156	93.6%	53	38.1%	68.2%
No report	5	3.0%	3	2.1%	2.6%

BOWELS MOVE DAILY:

Yes	152	91.2%	124	89.3%	90.1%
No	5	3.0%	10	7.2%	4.9%
No report	10	6.0%	3	2.1%	4.2%

MILK TAKEN DAILY:

None	32	19.0%	35	24.5%	21.9%
One glass	19	11.4%	21	15.1%	13.1%
Two glasses	37	22.2%	40	28.8%	25.1%
Three glasses	24	14.4%	19	13.5%	14.0%
Four glasses	36	21.4%	14	10.1%	16.3%
More than four glasses	17	10.2%	9	6.3%	8.5%
No report	2	1.2%	4	2.8%	2.0%

WATER TAKEN DAILY:

Less than three glasses	2	1.2%	11	7.9%	4.2%
Three glasses	20	12.0%	9	6.3%	9.5%
Four glasses	34	20.2%	27	19.5%	19.9%
Five glasses	20	12.0%	13	9.4%	7.5%
Six glasses	31	18.6%	52	37.4%	27.1%
More than six glasses	44	26.4%	21	14.7%	21.2%
No report	16	9.6%	1	0.7%	

MORE THAN ONE VEGETABLE DAILY:

Yes	126	75.6%	119	83.5%	80.0%
No	25	15.0%	16	11.2%	13.4%
No report	16	9.6%	4	2.8%	6.5%

FRUIT EATEN DAILY:

Yes	128	76.8%	128	89.6%	83.6%
No	23	13.8%	9	6.5%	10.1%
No report	16	9.6%	0		5.2%

HEALTH CRUSADE RULES

PRACTICED DAILY:

Yes	55	33.0%	77	53.9%	43.1%
No	71	42.2%	50	35.0%	39.5%
No report	41	24.6%	10	7.0%	1.6%

CLUB HEALTH GAME

PRACTICED DAILY:

Yes	33	19.6%	45	31.3%	25.5%
No	81	48.4%	68	47.6%	48.7%
No report	53	31.8%	24	16.8%	25.2%

EXAMINED AT CLINIC

LAST YEAR:

Yes	45	27.6%	16	11.9%	19.9%
No	105	63.0%	118	82.6%	72.8%
No report	16	9.6%	2	1.4%	5.9%

HEALTH EXAMINATION BEFORE:

Yes	110	66.0%	85	59.5%	63.7%
No	44	26.4%	51	35.7%	31.1%
No report	13	7.8%	1	0.7%	4.6%

In the physical examination 31.1 per cent of the total had a chest expansion of less than three inches. Twenty-eight and seven-tenths per cent were more than 7 per cent under the average weight for height and age; 20.7 per cent have definite signs of early rickets; and 25.2 per cent bad posture.

Goiter in varying degrees was present in 1.8 per cent of the boys and 7.9 per cent of the girls making 4.3 per cent of the total.

Of the whole number 55.6 per cent had diseased tonsils, 41.2 per cent adenoids, 25.2 per cent had enlarged cervical glands. Four and three-tenths per cent had evidences of previous middle-ear infection. Two per cent had discharging ears at the time of examination, and 1.3 per cent had defective hearing. Fifteen per cent

have history of tonsillitis and 7.5 per cent have history of running ears. There is a history of heart disease in 1.3 per cent and 3.6 per cent had heart murmurs or marked irregularity at the time of examination; a history of rheumatism in 1.6 per cent and "growing pains" in 7.2 per cent.

The prevalence of weak arches and flat feet among these children is surprising. There is a record of 22.5 per cent of flat feet in the total number.

Defective vision is present in 13.1 per cent.

As a group the girls observe better health habits than the boys, and their general physical condition is better. It may be only a coincidence, but the history of diseases of the respiratory tract shows that the girls were considerably more susceptible than the boys.

SUMMARY OF PHYSICAL DEFECTS

Total number examined 306

Number of boys examined 167

Number of girls examined 139

Number
of boysPercentage
of boysNumber
of girlsPercentage
of girlsPercentage
of total

MEASUREMENTS:

Chest expansion 1¼ inches	1	.6%	0	0.3%	
1½ inches	2	1.2%	1	0.7%	1.0%
2 inches	7	4.2%	17	12.2%	7.4%
2¼ inches	4	2.4%	7	5.0%	3.4%
2½ inches	18	10.8%	28	20.2%	15.0%
2¾ inches	5	3.0%	8	5.8%	4.0%
3 inches	43	25.8%	52	37.4%	31.0%
3¼ inches	13	7.8%	7	5.0%	6.1%
3½ inches	34	20.2%	12	8.6%	15.0%
3¾ inches	9	5.4%	5	3.5%	4.3%
4 inches	17	10.2%			5.8%
4¼ inches	5	3.0%	0		1.6%
4½ inches	5	3.0%	0		1.6%
4¾ inches	2	1.2%	0		0.6%
5 inches	2	1.2%	0		0.6%

NUTRITION:

Underweight more than 7%	46	27.6%	42	30.2%	28.7%
Overweight more than 20%	0		5	3.5%	1.6%

HAIR:

Brittle	6	3.6%	8	5.8%	4.3%
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SCALP:

Condition poor	3	1.8%	16	11.5%	5.8%
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FACE

Features irregular	2	1.2%	2	1.4%	1.3%
Chin receding or projecting	7	4.2%	10	7.2%	5.7%
Post-operative scar, hare lip	1	0.6%	0		0.3%

MOUTH:

Lips fissured	2	1.2%	3	2.1%	1.6%
Lips pale	0		3	2.1%	1.0%
Tongue coated	9	5.4%	14	10.1%	7.5%
Abnormal palate	6	3.6%	6	4.2%	3.7%

NECK:

Enlarged glands	41	24.6%	36	26.0%	25.2%
Goiter	3	1.8%	11	7.9%	4.3%

CHEST:

Secondary sex characteristics	2	1.2%	17	12.2%	5.8%
Asymmetrical	6	3.6%	4	2.8%	3.0%
Abnormal shape	17	10.2%	15	10.8%	10.5%
Ribs beaded	2	1.2%	2	1.4%	1.3%
Poor development	6	3.6%	4	2.8%	3.0%
Heart irregular	1	0.6%	4	2.8%	1.6%
Murmurs	2	1.2%	4	2.8%	2.0%
Lungs, abnormal sounds	0		1	0.7%	0.3%
"Heart displaced to left"	1	0.6%	0		0.3%
Abnormal heart boundaries	1	0.6%	0		0.3%

GLANDS:

Abnormal glands other than cervical region	4	2.4%	1	0.7%	1.6%
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ABDOMEN:

Abnormal distention	6	3.6%	2	1.4%	2.6%
Rupture at navel	1	0.6%	0		0.3%
Rupture at groin	3	1.8%			1.0%

SKIN:

Pale	0		4	2.8%	1.3%
Rough	3	1.8%	11	7.9%	4.3%
Eruptions	31	18.6%	28	20.2%	19.3%
Birthmarks or moles	35	20.8%	24	17.2%	19.3%
No vaccination scar	88	52.6%	65	46.8%	46.8%

MUSCLES AND NERVES:

Abnormal muscular development	1	0.6%	0		0.3%
Nervous instability	1	0.6%	1	0.7%	0.6%
Diminished reflexes	0		2	1.4%	0.6%

GENITALIA:

Phimosis	6	3.6%	0		2.0%
Varicocele—large, double	1	0.6%	0		0.3%
Varicocele—left	1	0.6%	0		0.3%
Undescended testes	1	0.6%	0		0.3%
Undeveloped testes	1	0.6%	0		0.3%

ARMS AND HANDS:

Asymmetrical	0		2	1.4%	0.6%
Nail defects	2	1.2%	6	4.2%	2.6%
Discolored	2	1.2%	1	0.7%	1.0%

LEGS AND FEET:

Enlarged epiphyses	2	1.2%	0		0.6%
Asymmetrical	0		2	1.4%	0.6%
Knock knee	4	2.4%	21	15.1%	7.7%
Bow legs	11	6.6%	15	10.8%	8.0%
Flat feet	29	17.4%	40	28.8%	22.5%
Nail and toe defects	19	11.4%	31	22.3%	16.3%
Ankle valgus	0		3	2.1%	1.0%
Dislocating patella	0		1	0.7%	0.3%
Thigh bones curved	0		1	0.7%	0.3%
Other foot defects	1	0.6%	0		0.3%

BACK:

Spine—lateral curvature	11	6.6%	15	10.8%	8.0%
Antero-posterior curvature	5	3. %	3	2.1%	2.6%
Winged scapulæ	24	14.4%	17	12.2%	13.4%

POSTURE AND GAIT:

Incorrect posture	35	20.5%	42	30.2%	25.2%
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EVIDENCE OF DEFECT OR

DISEASE NOT LISTED:	2	1.2%	1	0.7%	1.0%
Tenderness in upper right abdomen			1	0.7%	0.3%

UNFAVORABLE PERSONAL
APPEARANCE INCLUDING

UNCLEANLINESS:	20	12.0%	14	10.1%	11.1%
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PERSONALITY:

General impression not favorable	4	2.4%	6	4.2%	3.3%
Nervous (goiter)	1	0.6%	0		0.3%

DENTAL:

Abnormal gums	37	22.2%	17	12.2%	17.6%
Decayed teeth—1	24	14.4%	21	15.1%	14.7%
2	26	15.6%	22	15.8%	15.7%
3	49	29.4%	26	18.7%	24.5%
4	1	0.6%	5	3.5%	2.0%
5	0		1	0.7%	0.3%
Missing permanent—1	16	10.8%	20	14.4%	12.4%
2	6	3.6%	7	5.0%	4.0%
3	5	3. %	7	5.0%	3.7%
4	0		1	0.7%	0.3%
Teeth irregular	48	28.8%	37	26.8%	27.8%
Teeth discolored	14	8.4%	11	7.9%	7.6%
Teeth notched and ridged	18	10.8%	12	8.6%	9.2%
Teeth stained	142	85. %	95	68.4%	72.6%
Malocclusion	44	26.4%	45	32.4%	32.3%

EYES:

Cross eyes	1	0.6%	1	0.7%	0.6%
Conjunctivitis	2	1.2%	0		0.6%
Discharge	1	0.6%	0		0.3%
Defective vision (Snellen Test)	24	14.4%	16	11.5%	13.1%
Lids abnormal	0		3	2.1%	1.0%

EARS:

Defective hearing	3	1.8%	1	0.7%	1.3%
Opaque tympanum	5	3.0%	5	3.5%	3.3%
Inflamed tympanum	2	1.2%	1	0.7%	1.0%
Retraction of tympanum			1	0.7%	0.3%
Abnormal size	1	0.6%	0		0.3%
Abnormal position	1	0.6%	0		0.3%
Abnormal shape	1	0.6%	0		0.3%
Discharge	2	1.2%	4	2.8%	2.0%

NOSE AND NOSTRILS:

Stenosis	5	3.0%	3	2.1%	2.6%
Discharge	8	4.8%	9	6.3%	5.1%
Defective septum	31	18.6%	11	7.9%	13.7%
Malformation of nose	2	1.2%	0		0.6%

THROAT:

Enlarged tonsils	42	25.2%	22	15.8%	20.9%
Tonsils diseased	101	60.6%	71	51.0%	55.6%
Adenoids	83	49.6%	43	30.9%	41.2%

The prize winners were Sallie Willhelm, of Miranda, Faulk County, and Joseph Royce Thompson, of Ft. Pierre, Stanley County. The prize will be an opportunity with all expenses paid to attend the International Stock Show in Chicago this fall where both contestants will enter the National Health Contest.

As has been the custom in previous years the doctors gave their time for the physical examinations, the Division of Child Hygiene paying only their actual expenses. The Fair Board gave to each examiner a press pass admitting him to the grounds and the activities within.

Attendance by Counties

County	Boys	Girls	County	Boys	Girls	County	Boys	Girls
Aurora		2	Deuel	6	2	Lyman	3	3
Beadle	6	3	Dewey		2	McCook	6	
Brookings		2	Douglas		2	Marshall	6	4
Brown	10	11	Edmunds	1		Meade	3	1
Brule		3	Fall River		2	Miner	6	4
Butte	6	6	Faulk	7	11	Minnehaha	6	2
Campbell	4	3	Grant	1		Moody		2
Charles Mix	8	2	Haakon	3	2	Perkins	2	3
Clark	6	5	Hamlin	9	6	Roberts		2
Clay	6	5	Hanson	1	2	Sanborn		2
Codington	4	5	Hughes	3		Spink	6	4
Corson	7	2	Hyde		1	Stanley	4	5
Custer	3		Kingsbury	11	4	Turner		3
Davison		3	Lake	2	2	Union	2	3
Day	2	2	Lawrence	3	2	Yankton	1	1
	—	—	Lincoln	13	8		—	—
Totals	62	54		—	—		167	139
				122	100			

Examining Physicians

GENERAL PHYSICAL

Dr. D. R. Jones
St. Bd. Health
Dr. W. H. Griffith
Huron
Dr. A. E. Bostrom
DeSmet
Dr. A. H. Miller
Brookings
Dr. N. K. Hopkins
Arlington
Dr. E. B. Taylor
Huron
Dr. H. D. Sewell
Huron
Dr. T. F. Ballard
Aberdeen
Dr. G. E. Van Demark
Sioux Falls
Dr. T. G. Fitzgibbons
Huron
Dr. C. J. Long
Ramona

EAR, NOSE AND THROAT

Dr. H. L. Saylor
Huron
Dr. F. C. Nilsson
Sioux Falls
Dr. A. P. Schieb
Huron

EYE

Dr. E. D. Putnam
Sioux Falls
Dr. A. E. Johnson
Watertown
Dr. E. W. Feige
Huron

DENTAL

Dr. E. H. Bryan
Huron
Dr. W. F. Whorten
Huron
Dr. B. H. Kerr
Huron
Dr. C. K. Walker
Huron

I feel that this report should not be closed without an expression of appreciation of the hearty endorsement of this work by the State Medical Association and the State Board of

Health and of the genial co-operation and splendid assistance given by the entire group of physical examiners. They have given most generously of their professional knowledge and their time.

THE NEED FOR THE APPLICATION OF EUGENIC MEASURES FOR THE PREVENTION OF CRIME AND FOR RACE BETTERMENT

By C. F. DIGHT, M.D.

MINNEAPOLIS, MINNESOTA

People who observe and think well will agree with the leading and upright judge who said recently that "people of stunted intellects and moral defects are scattered all through society."

The socially unfit people thus described are a menace to civilization. They account for most of the lawlessness that prevails and the crimes committed. From such as they come the inmates of our prisons, schools for feeble-minded and delinquents, and more than 75 per cent of all prostitutes and incompetents. They are like poisonous weeds and stinging nettles in a garden, and the feeble-minded ones among them are multiplying between two and three times more rapidly, relatively, than normal-minded people. Not one-tenth of them who should be in institutions for their care are there according to the 1910 federal census. Those who are at large breed the ones who have to be sent to our overcrowded state institutions. In Minnesota these number about 500 yearly, who are placed in charge of the State Board of Control. They represent only a small fraction of the yearly total crop of mental and moral defectives who are the offspring chiefly of high-grade morons at large who, though adults, have a mental age below twelve years, capable in some ways perhaps, but lacking in judgment and in a proper sense of duty and justice, and are unable to control their selfish impulses and fail to conform to social order and because of defective brains drift easily into crime. Of their children from 20 to 100 per cent are subnormal mentally in any large number of cases.

Visit the School for Defectives at Faribault, and you will see some of the fruitage of these defectives at large. And the trees from which they come are still in bloom for further crops of idiots, imbeciles, feeble-minded, epileptics, and criminals. Only the worst of these are gathered up and given in charge of the State Board of Control whose work, carried on at a cost of several millions of dollars yearly, is useful and necessary but most of it is much like keeping an ambulance at the foot of a cliff to carry to the hospital the people who fall over, while the thing needed is a railing above to prevent such accidents.

A law permitting of eugenical sterilization of the unfit at large, but amply safeguarding their interests, would be placing the railing about the top of the cliff, would be to prevent the seeding of trees that bear unwholesome fruit, would be humanely removing the human barberry bushes that harbor the destructive rust germs, would be sifting from the wheat the tares which should not be sown, would be weeding the human garden, breeding a better herd, drying up the springs of evil, actually purifying the polluted germ-plasm streams of life, and would be a fundamental, practical preventive measure removing defects at their source and making impossible any more hereditarily feeble-minded and such delinquent persons as Tom Johnson, all of whom together cost the people of the United States \$500,000,000 to several times that sum yearly, Minnesota's part of it being estimated at more than \$30,000 dollars daily.

Sterilization of the obviously unfit, segregation of certain others, and eugenical education carried on in Minnesota for one generation would make it excelled by no other state in the Union. Its best types of men and women would be increased; its unfit dropped out humanely; crime would be reduced; dependency diminished; taxes greatly lowered; divorce made less frequent; homes made more congenial; the rearing of children would be improved, much disease would be prevented and our people would be made happier by the social uplift.

The opinion of practically all biologists, doctors, jurists, and thoughtful people who give any attention to the subject, is, that the lowest family strains must be prevented from procreating for the promotion of the public welfare else we may be swamped before long in a sea of mental and moral degeneracy. The situation to-day as nearly as it can be learned from World War intelligence tests and other psychological evidence is that 70 per cent of the people in general have a mental age of but thirteen years; only from 4 to 5 per cent of the people are exceptionally bright; only 3 per cent can reason well and have good judgment; 20 per cent are incapable of properly rearing children; about 4 per cent use opium or other habit-forming drugs;

and about 20 per cent suffer directly or indirectly from syphilis. In 1910 there were, according to the federal census, more insane people in the institutions for their care than there were students in all the colleges and universities in the United States. The epileptics were almost as numerous as the insane while the feeble-minded far outnumbered these two groups together. If to these the high-grade morons at

large be added it makes an army of six to seven millions of obviously unfit people in the United States and most of them are procreating rapidly, the fit slowly. Any person can see what the end will be if the situation goes on unchanged, for subnormal mentality is a bar to spiritual perception and to loyalty to the nation, the home and the institutions of society.

AN UNUSUAL CASE OF NEURITIS

By J. F. MALLOY, B.Sc., M.D.

MITCHELL, SOUTH DAKOTA

Unilateral femoral neuritis of traumatic etiology is comparatively rare and is worthy of report.

A well-developed, well-nourished female, age fifteen years, first consulted us on August 15, 1926. Four weeks previously she had fallen from a horse, striking on the left hip and shoulder. At the time of the accident she noticed no particular pain or lameness and walked a mile to her home. The following day she began to have severe pain over the anterior surface of the left thigh and in the knee-joint. The pain was accompanied by exquisite tenderness to superficial touch or pressure, while deep pressure gave her some measure of relief. This pain lasted for three weeks, gradually subsiding. Her chief complaint on her first visit was weakness in the left leg. Her general health had always been good.

The pupils were equal and reacted to light and accommodation. The teeth were all present and free from caries. The tonsils were moderately enlarged; a few plugs could be expressed. The chest was entirely negative. The heart measured 2.5 by 8.5 cm.; the sounds were normal. The abdomen was negative. There was normal mobility of the dorsal and lumbar spine, and no tenderness could be elicited on percussion over the vertebræ. The left thigh showed considerable atrophy of the quadriceps group of muscles. It measured 17 cm. midway between the hip-joint and the knee, while the right measured 19 cm. There was complete loss of power in the left psoas and in the left quadriceps muscles, the patient being unable to extend the lower leg or to flex the thigh on the abdomen. All other muscular movements of the leg were normal. The knee jerk was absent. The internal and ex-

ternal hamstring and the Achilles' reflexes were present and normal. There was no Babinski.

There was complete anesthesia to touch and pain over an area on the lateral and anterior aspect of the thigh and on the lateral and inner surfaces of the lower leg, corresponding to the distribution of the sensory fibers of the femoral nerve. Thermal sensibility was diminished about 50 per cent. Vibratory and joint sense at the ankle and in the toes were unchanged. Roentgenograms of the left knee, hip-joint, and lumbar spine were negative. Examination of the urine and blood revealed nothing abnormal. The blood Wassermann was negative.

Two months after onset the power had completely returned in the psoas muscle, and the anesthesia had begun to disappear. Three months later the power in the quadriceps was normal, and the anesthesia had entirely disappeared. At the present writing, except for slight atrophy of the quadriceps, the patient has made a complete recovery.

The femoral nerve, the largest branch of the lumbar plexus, is formed by the union of the first four lumbar nerves within the substance of the psoas muscle. The nerve trunk then occupies a groove between the iliacus and the psoas muscles and leaves the abdomen behind the inguinal ligament to enter the thigh at the outer side of the femoral vessels. Motor fibers are supplied to the iliacus, sartorius, pectineus, and quadriceps femoris. The cutaneous branches are distributed to the anterior and medial surfaces of the thigh and the inner side of the leg, foot, and the great toe. The internal saphenous, its longest branch, is entirely sensory. Direct injury of the nerve trunk from external injury is unusual, but its branches are not infrequently

involved in tumors of the cauda equina and in diseases of the meninges and vertebræ. Psoas abscess, intra-abdominal tumors and inflammations may also be the cause of femoral paralysis. Neuritis of both femoral nerves occasionally occurs as a part of a plexus neuritis or a multiple neuritis, but a femoral mononeuritis resulting from trauma is of infrequent occurrence. In the literature there are reported 136 cases where the femoral nerve alone has been involved. Eleven of these cases were bilateral. In 84 instances the disease occurred as a post-partum complication; in 8 instances as an idiopathic disorder; and once as a congenital paralysis. In the remainder of the cases gout, diabetes, and typhoid were named as etiological factors.

In our case on account of the involvement of the psoas muscle we explained the findings on the basis of a laceration of the psoas muscle and nerve trunks, hemorrhage into the muscle, and nerve sheaths, with a resulting neuritis. The neuritis was confined almost entirely to the femoral nerve, although there was also some involvement of the external cutaneous and peroneal branches of the lumbar plexus.

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BOOK NOTICES

1925 COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION, Rochester, Minnesota. Octavo of 1,078 pages, 252 illustrations. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, \$13.00 net.

As with former volumes of collected papers of the Mayo Clinic the 1925 is divided into sections. There are sections which include papers on The Alimentary Tract; Urogenital Organs; Ductless Glands; Blood and Circulatory Organs; Skin and Syphilis; Head, Trunk, and Extremities; Chest; Brain and Nervous System; Technic; and Miscellaneous. The last section includes some experimental work and papers on veterinary subjects, as well as topics not conveniently classified in other divisions. The titles of some papers are given where the papers themselves are not printed.

The book is a valuable one, as it contains discussions and descriptions together with statistical facts. It is well illustrated. The wealth of material which has furnished the basis of this and previous volumes and the excellent organization which has studied these cases so carefully are unusual, and the collection of papers is of a special interest and value.

There are several papers on ulcer of the stomach and duodenum. These deal with etiology, pathology,

diagnosis, fundamental principles of treatment, and also with operative technic. A series of four hundred operated cases of ulcer of the stomach and duodenum is reported. Postoperative sequelæ and complications are dealt with. Studies on the physiology of the liver, on jaundice, and on diseases of the liver are discussed. Fifteen cases of verified carcinoma of the duodenum are reported. Toxemia associated with gastric stasis with its symptoms, diagnosis, and treatment is the subject of one paper. Other topics dealt with in the section on the alimentary tract are colitis, carcinoma of the colon, and hemorrhoids.

In the urogenital section are discussed nephritis, diuretics, intravenous chemotherapy in urinary infections, surgical diseases of the kidney, and their treatment. Prostatic surgery furnishes subjects for several papers with pre-operative management and preparation and a clinical study of one thousand cases of carcinoma of the prostate is given. Gynecologic and obstetrical subjects are recorded.

The section on ductless glands contains excellent discussions on the functions of the thyroid, chemistry of thyroxin, discussion on the Mayo Clinic conception of thyroid diseases and clinical classification of goiter and the effect of iodine on different types of goiter and the use of iodine in the treatment of exophthalmic goiter. These papers are especially good.

Parathyroid and calcium lactate are given in the treatment of a case of tetany, and this case was reported and discussed.

In the blood-vascular section, prognosis and mode of death in heart conditions are discussed. Sympathetic neurectomy has been studied and discussed, and its use in the treatment of Raynaud's disease and the effect on blood vessel caliber and temperature of the extremities following a division of the sympathetic nerves. The splenic syndromes are discussed.

"Recent Advances in the Treatment of Syphilis" is a subject of one paper in which bismuth sulpharsphenamin, tryparsamid, and malaria are considered.

Bone metastasis from breast carcinoma is studied and reported. Records of 1,985 cases of carcinoma of the breast in the preceding six years were examined. In these, 67 (3.48 per cent) metastases to the bone had occurred. The distribution and percentage of involvement of different bones were given. There are papers on otological, laryngological, and rhinological subjects. One paper reports the unusual pharyngeal lesions of chronic lymphatic leukemia, leprosy, and pemphigus.

Ununited fractures in 259 patients with studies, statistics and treatment are discussed. There are also papers dealing with surgical diathermy, tumors of the trachea, Roentgen-ray, diathermy of bronchiectasis, experimental aspiration, and tuberculosis of the pleura. There are reports of studies of etiology, of epidemic hiccup, and its relation to encephalitis.

The book is a wonderful collection of papers published by a group of men who have carefully studied a vast amount of material, recorded their observations, and given their descriptions in the papers published throughout the year 1925.

—WILLARD D. WHITE, M.D.

THE JOURNAL-LANCET

Represents the Medical Profession of
Minnesota, North Dakota, South Dakota and Montana

The Official Journal of the
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The Hennepin County Medical Society
The Soo Railway Surgical Association
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DECEMBER 1, 1926

X-RAY AS A TREATMENT FOR ERYSIPELAS

A few days ago a two-column article came out in one of the Minneapolis daily papers on some experiment that had been made by an X-ray man in Minneapolis as to the value of the X-ray in the treatment of erysipelas. Erysipelas, as is known, is an acute febrile disease with inflamed skin due to the invasion of streptococci, and many remedies, both constitutional and local, have been offered for its cure, with application of all kinds of solutions including the much used magnesium sulphate solution, and yet these investigators who are reputable men have found that the X-ray not only aborts the attack, but shortens it. So far fifty-five cases have been reported and these experiments have been made at the Minneapolis General Hospital under the observation of Dr. Walter E. List, its superintendent. We do not know yet, of course, whether this is going to be a universal remedy, nor is it probable that it can be universally applied. Fortunately, cases of erysipelas are not very common, and it is not very difficult to move a patient with erysipelas from his home to a hospital that has an X-ray outfit.

Naturally, we shall hear more about this from time to time as experimenters from other parts of the state or country will try it out. Some of the medical men have criticised the publica-

tion of an article of this kind in the daily press rather than through the columns of a medical journal, but as an article is in preparation and will soon be published in one of the prominent medical journals, we see no reason why the chairman of the Publicity Committee of the Hennepin County Medical Society should not take upon himself the fathering of the already published article. We think no offense has been committed, and certainly no breach of medical ethics because no name is mentioned, and if publicity is to be continued through the Hennepin County Medical Society they certainly should be given authority to make important announcements such as would be made.

Whether this is a sovereign remedy remains to be seen. There are some objections to it and some objectors, and time will tell, but if we are to consider experiments which have already been made, why not give it to the country for the country's good?

WHIP THE OFFENDERS

For two weeks articles by Judge Marcus Kavanagh, of Chicago, have been appearing in the *Minneapolis Journal*, articles that have to do with the rising tide of crime, and they have been very interesting and not infrequently offer suggestions for the benefit of the victims of criminals. He realizes, too, that we have in this country a very large number of law-evaders, of men who delight in crime and who, if caught in some criminal act, are able to employ brilliant lawyers who are accustomed to criminal cases. Most of these offenders realize that a number of states have abolished capital punishment, and they feel rather easy in their minds because of the lack of enforcement of laws concerning criminal classes. Very often they feel that murder may be committed with impunity and that their offenses will be condoned by delays of the law and the astuteness of the attorneys who defend them. The advantage of every loophole seems to be in their favor, while the judge is obliged to sit on the bench and reject the testimony he knows is valuable, but in his position as judge he is obliged by law to withhold his advice. The result is that delays are the most frequent part of the trial, convictions are extremely rare, capital punishment is a thing of the past in many states of the United States, and the criminal does not worry about being sent to prison for many years or for life because he knows that the sympathies of the community will rush to his rescue, or at least the community will plead for his liberty so that he may have a

chance to be re-instated in his domestic and public life. Many believe he can be redeemed, but among those redeemed there are few who continue in that state of mind. Most of them slip backward and are again found among the criminal classes.

The difference between the trials of criminals in this country and in England is so marked that it leads to much comment on the part of Judge Kavanagh. There all technical evasions and delays are pushed to one side, and not infrequently the trial for capital punishment is completed in one or two days, and execution of sentence is carried out properly, and imprisonment is promptly imposed by the judge. There is no such thing as sentimentalism in England; that is, if there is the sentimentalists keep very quiet and no attention is paid to them. Very few of the old criminals are pardoned. They certainly do not enjoy the same privileges the criminals do in this country whose life and freedom depend on a Parole Board or a Pardon Board, but the recent jolt that we have had in Minnesota from the Commission of Preventable Crime has kept the Parole Board and the Pardon Board from issuing many free passes to former life.

In some states, however, corporal punishment is still carried out, as in Delaware where this form of punishment never has been changed. In the history of the state the idea is that the whip should be freely used for offenders. Attempts have been made occasionally to repeal this law, but the people have promptly turned down these attempts, for they find that corporal punishment is much more lasting in its effect than anything in the way of imprisonment. There are some states, too, which have attempted the same form of punishment. They also have capital punishment in Delaware, as well as corporal punishment, so that the criminal has a pretty poor show for his freedom.

The average criminal is probably a sensualist, and he is an extremely sensitive man, and for that reason he fears bodily pain. Then, too, the humiliation that goes with public lashing is the one thing that he dislikes, and it sometimes breaks his spirit to such a degree that he goes elsewhere for residence. In some cases the criminal is severely lashed at the time he is sentenced to prison and the lashes are repeated when he comes out. In that way he remembers that it is easier to go straight than to be a criminal. We think in one instance only did Judge Kavanagh find that corporal punishment was repeated on the same man. This form of punishment is applied to larceny, burglary, attempted

rape on young people, felonious assaults on women, wife-beating, and highway robbery. This covers a variety of criminal acts that are punishable by the whip. It very naturally follows that murder is treated with capital punishment so that the state of Delaware should have set an example which should be followed by other states. We hope when the Minnesota legislature meets in January they will consider punishment of the criminal, not only the enforcement of the law, but the establishment of corporal punishment.

THE AMERICAN HOSPITAL ASSOCIATION

This Association has grown tremendously in the last few years because of its managing officers and the interest generally that physicians and hospital men are taking in the effort to make it a greater institution even than it now is. The last meeting of the Association was at Atlantic City. This Association has done a great deal to further and improve hospital conditions all over the country, and at each session they publish a daily bulletin which gives all the information that one requires in regard to hospitals both here and in foreign lands.

During the past year Dr. A. C. Bachmeyer has been president of the Association. He is also the Dean of the Cincinnati Medical School and the Superintendent of the Cincinnati General Hospital, a hospital known all over this country, and it is partly to his interest and influence that this Association has reached its present efficiency. The vice-president, Dr. R. G. Broderick, director of hospitals, Alameda County, Highland Hospital, Oakland, California, has been made the president for 1927, and this leads up to what we have in view. The various committees in Minneapolis have been endeavoring to induce the Hospital Association to come to Minneapolis in 1927, and as they meet in the fall we shall be in readiness for them and shall be ready to entertain them in royal good style.

Dr. S. S. Goldwater, who has been the director of Mt. Sinai Hospital, New York City, for a number of years, has just returned from a tour of inspection of European hospitals and he says, "Although the United States has more hospitals than Great Britain, France, Italy, Sweden, Holland, Canada, Australia, China, and Japan combined, America can learn much from the British methods of caring for communicable diseases in hospitals." Dr. Goldwater also calls the American hospital "the pride of the country," and he cites the enormous sums of money spent on new

hospitals and hospital extensions. He believes that, generally speaking, there is less restlessness and better discipline in Continental hospitals than there is in the hospitals of the United States. This is so noticeable that many American observers have felt that their discipline there is too severe. However, if anyone has been managing a hospital, he will know that sometimes it is very necessary, absolutely necessary, to see that discipline is maintained in the hospital, not only for the benefit of the hospital but for the benefit of the patients.

Hence, if we can do anything to further the instruction and the information which is gained from the meeting of the Hospital Association, let us by all means secure it for Minneapolis because we need perhaps some advice and information that they only can give us in one of their Association meetings.

NORTHWESTERN HOSPITAL ADDITION OPENED TO PUBLIC

Two years ago the Northwestern Hospital Board of Minneapolis started a campaign for money with which to erect an additional building, and on the strength of the money which was subscribed it was decided to put up something that would be both serviceable and permanent, and we had the pleasure of inspecting on Thursday, November 18, this new addition which cost \$600,000.00, a six-story building, located on the corner of Elliot Avenue and Twenty-seventh Street.

The entrance is through the old building on Chicago Avenue, and this addition has been joined to the old hospital quarters by a corridor. Not only that, but a new additional one-story structure was added to join the new wing to the old wings, and this is the hospital kitchen, the most complete and clever combination for the preparation of food and for the care of food that is found anywhere. They have the new-fashioned methods of keeping food cool and sanitary in an iceless ice-box. It is a pleasure to go through a kitchen of this kind and see the careful method used in preparing the food, which is then put on the electric lifts that take it to the different floors. The service rooms are connected by a tunnel with a service building so there is no exposure of the food to cold or impurities.

The second, third, and fourth floors are given over to private rooms for patients and they have everything that modern methods in modern hospitals have produced. They have doors which close without the usual noise, something that

should be used in every hospital in the land, for the slamming of a hospital door has been a very annoying element in most hospitals. Metal has been used wherever it is possible. The beds are of iron, and the door frames in every room are steel. Then, too, many of the bedrooms have a special toilet and wash basin, and a few of them are so connected up with bathrooms that the bathroom can be used for one patient or can be used by the adjoining room. This is not a new feature, but it is very carefully carried out in the Northwestern Hospital.

Then, too, some of the elevators are separated from the hall by corridors, so there is no slamming of elevator doors, and the patients who occupy rooms on such floors do not hear the elevators at all, as they are self-operating and practically noiseless.

The rooms are also very tastefully arranged. The walls and furniture are tinted in a pleasing manner that is very restful and comforting to the eye, something that is needed in every hospital. They have special cabinets which were devised by the superintendent and her associate that combine many features that are easy of operation. The top of the cabinet becomes a table for a tray and can be folded away without difficulty.

There are six operating-rooms on the sixth floor, four for major operations and two for minor operations. These are fitted with double steel windows with electrically controlled shades. All operating rooms are finished in tile; the floors are of tile, separated by metal, to conduct electricity to the ground, thus eliminating all possibility of explosions caused by electric sparks igniting gases used in the operating-rooms. On this floor, too, there are sterilizing rooms, an instrument room with a separate compartment for every surgeon, a room for the treatment of fractures, rooms for the administration of anesthetics, and rooms for the doctors. On each floor there is a sun-parlor, all of which have been very comfortably and tastefully fitted out by a former patient who appreciated what had been done for her and who evidently saw the necessity of providing rooms for the recreation and comfort of the patients. The corridors throughout the hospital are tile with rubber centers.

This new building is of reinforced concrete faced with brick and trimmed with stone and ornamental iron. It adds much to the completeness of the hospital.

The Northwestern Hospital was originally built in 1887, and the building that was then

constructed is of four stories. Later, in 1908, a five-story annex was erected. This has been entirely rebuilt with a new front. They also have a large building devoted entirely to nurses' quarters, and the engine room and laundry building are separated from the hospital proper.

The Northwestern Hospital now contains approximately 225 beds and it is operated and managed by a committee of fifty women. The Building Committee includes Mrs. Charles R. Fowler, who is president of the Hospital Board, Mrs. W. G. Gregory, Mrs. F. H. Bowman, Mrs. W. L. Wolford, Mrs. F. E. Kenaston, Mrs. Horace Newhart, and Mrs. F. H. Wellcome. The operation of the hospital is carried on by its superintendent, Mrs. Pearl L. Rexford, who has been connected with the hospital for several years, and under her general and capable management it has become one of the chief hospital centers of Minneapolis.

The plans for the hospital addition were drawn by Olaf Thorshov, of Long and Thorshov, architects. C. F. Haglin & Sons were contractors.

MISCELLANY

[We give below the appeal made by the Hennepin County Public Health Association for the purchase of Christmas Seals, which is a universal appeal, one that should meet a most generous response from physicians who so well know the universal need for such a response.—THE EDITOR.]

THE TUBERCULOSIS CHRISTMAS SEAL CAMPAIGN

Not to lose the advantage we have gained in a great struggle, unremitting effort is necessary in the fight against tuberculosis. This fight is financed by the sale of tuberculosis Christmas Seals, conducted from November 26th until Christmas Day.

The most productive period of life is between the ages of 21 and 50 years. Thousands of dollars are usually spent to rear and to prepare the individual for his life work. During this highly productive period he is, if ever, to pay back his debt to the world. Dying during this period he cannot balance the account. Herein the fight against tuberculosis finds a real significance.

There are diseases that roll up a higher death-rate, but none approaches tuberculosis in the havoc it plays with human beings in the most productive period of life, at their highest activity and engaged in the bearing and rearing of the young.

Eighty per cent of deaths from tuberculosis occur between the ages of 21 and 50.

The Christmas Seals have supported this fight against tuberculosis in Minneapolis for eighteen years past. That it has been a good fight the adequate death records of the city, since 1911, go to show. In these fifteen years the death-rate from tuberculosis has been reduced by two-thirds; that is 33 die from this disease to-day where 100 died

in 1911. In the same time, the tuberculosis death-rate in Minnesota, as a whole, has been cut in half; while in the United States at large it has been cut by one-third. The accomplishment in Minneapolis is outstanding.

In the last three years alone, Minneapolis has recorded a reduction of deaths among workers, between 20 and 49 years, of thirty-five per cent.

The Hennepin County Tuberculosis Association conducts its campaign against tuberculosis all the year round. Special activities to safeguard the health of workers; the prevention of careless spitting in public places, (a means of spreading the disease); the conduct of free clinics; the visits of trained nurses to tuberculous patients in their homes; the maintenance of an employment bureau to secure jobs for men and women recovered from the disease; an open-window week; a crusade among negroes and other foreign groups; an information bureau; the giving of health talks; the display of motion pictures; and the distribution of printed material are features of its campaign.

The Hennepin County Tuberculosis Association sponsors the sale of Tuberculosis Christmas Seals in Minneapolis. It urges everyone to co-operate in the fight against this common disease by the generous purchase of the Christmas Seals. Buy and use them. Use and buy them!

NEWS ITEMS

Dr. G. F. Walter has moved from Dawson to Marble.

Dr. C. E. Robbins has moved from Fargo, N. D., to Pierre, S. D.

Dr. O. D. McCartney has moved from Carpio, N. D., to Williston, N. D.

The meeting of the Interurban Surgical Society was held in Rochester, November 19 and 20.

Itasca County, Minn., voted at the November election to build an addition to the County Hospital at once.

Dr. John Graham, of Starkweather, N. D., was married last week to Miss Helen L. McLaren, of Toronto, Canada.

Dr. Oscar H. Wolner has moved from Eveleth to Montevideo. Dr. Wolner is a graduate of the Medical School of the U. of M., class of '02.

Dr. W. D. Sheldon, of Rochester, was elected president of the Central Neuropsychiatric Society for the coming year at the October meeting of the Society in Cincinnati.

Dr. L. J. Tiber, of St. Paul, who is studying in Vienna, was recently elected president of the American Society of Physicians in Vienna, now composed of nearly 300 physicians.

Dr. Donald D. Van Slyke, of the Rockefeller Institute, New York City, gave a Mayo Foundation lecture in Rochester, November 22. His subject was "Urea Excretion in Nephritis."

Dr. George W. Phillips, who is working in the United States Veterans Bureau Hospitals, has been transferred from Sioux Falls, S. D., to Minneapolis, to take up work as a tuberculosis expert in Hospital No. 68.

The Sioux Valley Medical Association will hold its mid-winter meeting on January 18 and 19. The only speakers for the program so far announced are Dr. F. E. Clough, of Lead, S. D., and Dr. B. C. Corbus, of Chicago.

Dr. F. W. Schlutz, Professor of Pediatrics, University of Minnesota, has been appointed a delegate of the American Pediatric Society to the Fifth Pan-American Child Congress to meet in Havana on February 13-20, 1927.

Dr. Reuben M. Anderson, of Morristown (Minn.), was married last week to Miss Mildred M. Peterson, of St. Paul. Dr. Anderson is a 1924 graduate of the Medical School of the U. of M., and recently located at Morristown.

Dr. Geo. H. Parmenter, who was surgeon in the U. S. Veteran Hospital in St. Paul for two or more years and is now in the Veterans Bureau Hospital at Legion, Texas, was married last month to Miss Margaret E. Reamy, of St. Paul.

Dr. J. P. Schneider, of Minneapolis, spoke before the Interurban Academy of Medicine on November 17, at Superior, Wis. His subject was "A New Theory of the Etiology of Pernicious Anemia and Certain Facts Supporting the Same."

At the annual meeting of the Interurban Medical Society (Duluth and Superior), held last month, officers were elected as follows: President, Dr. B. F. Davis, Duluth; vice-president, Dr. G. J. Hathaway, Superior; secretary-treasurer, Dr. M. H. Tibbetts, Duluth.

Drs. T. F. Riggs and J. F. D. Cook, respectively, president and secretary, of the South Dakota State Medical Association, attended the November meeting of the Huron District Medical Society to talk over the next annual meeting of the State Association.

Dr. John B. Deaver, of Philadelphia, will address the Minneapolis Surgical Society at its December meeting, at 8:00 P. M., on December 2, in the library of the Hennepin County Medical

Society, Donaldson Bldg., Minneapolis. All physicians are cordially invited.

Dr. Palmer N. Fenger, of Askov, died last month at the age of 64. Dr. Fenger was a graduate of the University of Copenhagen. He practiced medicine in Wisconsin and Iowa before coming to Minnesota, and practiced in Askov for thirteen years prior to his death.

Dr. L. E. Barnett, Emeritus Professor of Surgery, University of Otago, New Zealand, visited the Mayo Clinic on his return from a trip to England, where he attended the meeting of the British Medical Association. Dr. Barnett is President of the Australian branch of the British Medical Association.

The vaccination to immunize children against scarlet fever and diphtheria done in Minneapolis for several weeks past has been the most extensive work in preventive medicine in the history of the city. The free clinics have done most of the work, but a large part of it was done in private practice.

Dr. H. Sheriden Baketel, well known in eastern medical centers for his work as a medical college professor and in medical journalism as editor of the *Medical Times* has been elected president of Messrs. Reed & Carnrick, of Jersey City (of which corporation he was vice-president) to succeed the late Dr. Sartorius.

A new wing added to the Northwestern Hospital of Minneapolis was open for public inspection on November 18. It is a beautiful modern hospital in itself, containing seventy-five beds, six operating rooms, diet kitchens, and all the accessories of the modern hospital. The Northwestern is now a 225-bed hospital.

The following hospitals in this territory have been recognized since the October list was published as meeting the standard of the American College of Surgeons: *Minnesota*,—Glen Lake Sanatorium, Oak Terrace; Wesley Hospital, Wadena. *South Dakota*,—Methodist Deaconess Hospital, Rapid City; Our Lady of Lourdes Hospital, Hot Springs; and St. Joseph's Hospital, Deadwood.

The first report of the new Wesley Hospital (65-bed capacity) of Wadena, Minn., has just been published. It covers a period of eleven months of 1925, and it is a report of great human service to the community which sustains the hospital and its admirable school for nurses, conducted by Mrs. Lydia H. Kellar, R.N., formerly of Minneapolis.

Dr. H. E. French, Dean of the University of North Dakota Medical School, and Dr. A. W. Ide, Chief Surgeon of the Northern Pacific Railway, presented papers before the Grand Forks (N. D.) District Medical Society last month. Dr. French spoke of his work done in Philadelphia during his year's vacation. Dr. Ide spoke on "Injuries to the Spine."

This territory was well represented at the meeting of the American Association of Railway Surgeons last month in Chicago. The following surgeons appear on the program: Dr. R. L. Murdy, Aberdeen, S. D.; Dr. Gilbert Hendrickson, Enderlin, N. D.; Dr. O. F. Melby, Thief River Falls, Minn.; Dr. F. B. Strouss, Bismarck, N. D.; Dr. H. W. Meyerding, Rochester, Minn.

Dr. Thomas J. Maloney, of St. Paul, died last week at the age of 57. Dr. Maloney was a graduate of the Medical School of the U. of M., class of '01 and studied in New York and Europe. He did active service in the World War. Later he was president of the Northwestern Medical Officers' Association, and was Chief Surgeon of the Minnesota National Guard at the time of his death.

Arrangements for the 1927 European trip of members of the Inter-State Post-Graduate Assembly of North America are now under way, and information concerning the trip will soon be available. The principal cities to be visited are London, Edinburgh, Oslo, Stockholm, Upsala, Lund, Copenhagen, Hamburg, Leipzig, Munich, Strasbourg, Heidelberg, Frankfurt, and Paris. The cost of the trip will be about \$1,000 a person from New York.

The following surgeons in this territory have become Fellows of the American College of Surgeons this year (arranged alphabetically in their respective states): *Minnesota*,—Dr. W. T. Anderson, St. Paul; Dr. H. R. Basinger, Mountain Lake; Dr. S. R. Blacklock, Hibbing; Dr. W. J. Byrnes, Minneapolis; Dr. J. A. Cameron, St. Paul; Dr. C. E. Connor, St. Paul; Dr. N. McK. Craig, Rochester; Drs. R. R. Cranmer, G. G. Eitel, P. N. Giessler, and W. P. Herbst, Minneapolis; Dr. H. E. Hullsiek, St. Paul; Dr. J. R. Manley, Duluth; Dr. H. O. McPheeters, Minneapolis; Dr. L. M. Miles, St. Paul; Dr. V. I. Miller, Mankato; Dr. W. L. Palmer, Albert Lea; Dr. F. J. Savage, St. Paul; Dr. I. Sivertsen, Minneapolis; Dr. G. J. Tweedy, Winona; Dr. W. Walters, Rochester; Dr. H. F. B. Wiese, Minneapolis; Dr. W. G. Workman, Tracy; Dr. A. A. Zierald, Minneapolis. *South Dakota*,—

Dr. F. D. Gillis, Mitchell; Dr. A. A. Mc Laurin, Pierre; and Dr. B. H. Sprague, Huron.

Cass County Medical Society of North Dakota

The Cass County Society is in session to-day (Tuesday, November 30th). Dr. J. P. Schneider, of the Nicollet Clinic, Minneapolis, is scheduled to address the Society on "Periodic Health Examinations," discussing the physician's part in the program sponsored by the American Medical Association.

On December 15th the Society will hold its annual meeting, with election of officers for the coming year and annual reports of the President and Secretary. Dr. Hilding Berglund, professor of Medicine, University of Minnesota, will address the Society on "The Sad State of Affairs in the Diagnosis of Cancer of the Stomach."

—LESTER J. EVANS, M.D.,
Secretary.

The Sixth District (N. D.) Medical Society

The fourth meeting of the Sixth District Medical Society of North Dakota, was held at the McKenzie Hotel, Bismarck, N. D., at 7:00 P. M., October 12, 1926. Dinner was served to thirty-four members and five visitors.

A musical program was rendered at intervals during the dinner. Following this a short business meeting was held in which the question of liability insurance was discussed, and further action was deferred until the next meeting.

A motion was made, seconded, and carried with one dissenting vote, that all members not attending the number of meetings required by the by-laws in each year are automatically dropped from the roll of the Society.

Following this the scientific program was taken up. Dr. B. S. Nickerson, chairman of the program committee in the chair.

A paper on "Intestinal Obstruction" was read by Dr. Jessier Bowen, of Dickinson, N. D.

The paper treated the subject from the standpoint of why intestinal obstruction is diagnosed so infrequently. The reason given was the fact that it is usually secondary to some other trouble which overshadows the symptoms of obstruction. The symptoms of an acute obstruction are, in order, pain, vomiting, and shock.

If located in the duodenum or the jejunum the pain is located above the umbilicus, very intense at first and gradually decreasing in violence. At any point lower in the bowel the pain is at the umbilicus. Rigidity is not marked until the onset of peritonitis.

Vomiting in high obstruction is more severe than in low and is not related to the food intake; that is, it is a persistent regurgitation with a characteristic odor.

Shock must be avoided by making an early diagnosis and operating immediately, for after shock come collapse and death.

In chronic obstruction the onset is insidious, and attacks of mucous diarrhea are frequent. The age of the patient also must be taken into consideration.

Discussion of the paper by Drs. Ramstad, Roan, LaRose, and Rice followed.

The second paper of the evening, "Some End-

results of Fractures, as Seen by the Compensation Bureau," was read by Dr. Bodenstab.

A large number of pictures of bones were shown in various states of malposition, as end-results of the treatment given.

The paper concluded with a discussion of the treatment of Pott's fracture, some plates of poor end-results also being shown.

A Pott's fracture should always be put up with inversion of the foot. The paper concluded with a discussion of the injustice of such end-results both to the patient and the State Compensation Bureau.

Dr. Bowen, in discussion, pointed out that aside from the poor reduction of Pott's fracture in one case, the arthritis and osteoporosis present were due to the dressing being too tight and the cast being left on too long. He ended with the injunction to use plenty of padding and remove the cast in ten days, as it never will hold if it does not hold then. When pain is gone it is a good time to remove the cast except perhaps in the femur where alignment is necessary.

The committee for the December meeting is Drs. Diven, Robinson, and L. G. Smith.

—R. W. HENDERSON, M. D.,
Secretary.

Position Wanted

A 1923 Rush graduate wishes assistantship to a general practitioner in the Twin Cities. Address 244, care of this office.

Locum Tenens Work in Minneapolis Desired

I desire locum tenens work in Minneapolis for any length of time. Best of references. Address 241, care of this office.

Instruments for Sale

One big Fischer Diathermy, one Morse Wave Generator, and one Hanovia Air-Cooled Quartz Lamp. At a bargain. Address 238, care of this office.

Locum Tenens Wanted

I want a physician to take care of my general practice for two or three months from the last week in December. Practice good; collections good; good town in North Dakota. Address 243, care of this office.

Work Wanted by Recent Graduate

I desire to become associated with a physician in active practice, either as assistant or as partner, or I will accept locum tenens work temporarily. I am a recent graduate of Iowa State University. Address 236, care of this office.

Practice in North Dakota Wanted

A physician who has practiced several years in North Dakota desires a general county practice in that state. Speaks German. Is available at once. Address 249, care of this office.

Laboratory Work Wanted

Laboratory technician, with experience in blood chemistry, serology, and basal metabolism, desires position in doctor's office or hospital. Two years in college. Also can do clinical work. Address 245, care of this office.

Heidbrink Apparatus for Sale

I have retired from practice and wish to sell a Heidbrink Gas apparatus, No. 2640, at a bargain. Includes regular case for carrying packed outfit. Address 248, care of this office.

Position Wanted in Twin Cities

A physician doing eye, ear, nose, and throat work in a small Minnesota city wants part or possibly full time work in the Twin Cities. Address 246, care of this office.

Assistant Wanted

Wanted, on or before January 1, an assistant physician for general practice in Southern Minnesota. Must be a male, single, and protestant. A Scandinavian preferred. Will pay \$150 a month, including board and room. Address 247, care of this office.

Hospital Superintendent Wanted

A nurse as superintendent of a 12-bed up-to-date hospital in a South Dakota town of 1,500, by December 1. Must be trained in major operative work. Will pay \$100 a month and maintenance. Give age, weight, and height, and send photograph. Address 230, care of this office.

Young Physician Wanted

Must be available at once, to take over old established general practice. City of 8,500 population; Northern Minnesota. Leaving because of illness. No real estate. A real opportunity for a live young man. Give full information in first letter. Do not answer unless you can come at once and mean business. Address 231, care of this office.

Practice for Sale

An old-established practice in North Dakota city of 15,000 population. Reason for selling, death of physician. Practice includes all office furniture and equipment and instruments for surgery and eye, ear, nose, and throat work. This practice of thirty-three years standing offers an excellent opportunity for the right man. Address 240, care of this office.

Hospital Position Wanted

Position wanted by a young woman, registered nurse in North and South Dakota, graduate of a Bismarck hospital training school. Has had four years experience in office and country practice work especially in O. B. Some experience in x-ray work and laboratory. At the present surgical nurse. Can start January first. Address 239, care of this office.

For Sale—Hospital and Practice

\$10,000 practice and \$10,000 hospital fully equipped and ready to make money from start. Business established 18 years. Scandinavian community. Collections 90 per cent. Dairy country, high school, good roads, in the lake region of North Central Minnesota, good fishing and duck hunting. 6-bed hospital with living rooms on ground floor. Modern. The hospital building alone is worth the price I'm asking for all—\$12,000 is all I ask. \$5,000 down, terms to suit. Will introduce. Am moving to California. Address 242, care of this office.

THE JOURNAL LANCET

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SURGICAL CLINIC*

BY BENJAMIN F. LOUNSBURY, M.D.

Assistant Professor of Surgery, Department of Medicine, University of Illinois
CHICAGO, ILLINOIS

Ladies and Gentlemen:

I wish first to express my appreciation of the opportunity to appear before you. Dr. Murdy has selected some cases for presentation and will read the history of the first patient.

CASE 1. *Rupture of spleen*—

DR. R. L. MURDY: This man is thirty-one years old. His mother and father are living and well, as are one brother and one sister. There is no history of carcinoma or tuberculosis in the family. The grandmother had heart trouble.

When first seen, on July 30, 1924, the principal complaints were pain and abdominal cramps. He gave a history of being thrown off a horse about nine days before and fracturing two ribs. His local physician strapped the left side. He felt fairly well and made no other complaint at that time except of soreness. He was up and about until nine days after the accident, when he was suddenly taken sick. He had been lying down and fell asleep, but was awakened about 2:00 p. m., with a very sharp pain all through the upper abdomen. He felt nauseated and vomited. When he tried to get up the pain became very severe and he fainted. He felt some relief after vomiting, and he also had a hypodermic injection to relieve the pain. There was marked tenderness across the lower abdomen. He was brought to the hospital about 6:00 p. m.

Physical examination was negative except for generalized abdominal tenderness, especially on the right side. There were rigidity over the right and left rectus muscle, soreness over the lower ribs, and hemorrhage.

Operation disclosed a ruptured spleen, with old clots and copious fresh hemorrhage.

A splenectomy was performed, and he made a rapid and uneventful recovery. His blood is com-

pletely restored, and has been used for a donor.

The blood pictures on three different occasions were as follows:

Date	7/30/24	1/9/26	5/15/26
Hemoglobin	98		75
R.B.C.	5,030,000	4,820,000	5,060,000
W.B.C.	14,450		9,500

DR. LOUNSBURY: I do not know that a diagnosis of rupture of the spleen is ever made any more accurately than a diagnosis of pancreatitis. We usually have a patient in profound shock, with a history of an injury, or we have a patient who gradually goes into shock and begins to develop a rapid pulse and signs of an acute abdomen. In 1,800 to 2,000 cases of injury annually over a period of fifteen years we have had seven cases of rupture of the spleen. In three cases rupture of the spleen was suspected. In two instances the patients were in profound shock, with a cold, clammy skin, and the only diagnosis that could be made was that of internal hemorrhage. I do not know of any way of localizing or coming to a definite diagnosis without opening the abdomen.

What one does must be determined largely by the patient's condition. In many of the patients with shock following severe injury we think we have nothing more than shock, with the blood going into the deep vessels. I do not know of any other way of determining whether we are dealing with shock with the blood going into the deep vessels, or whether it is actually a case of abdominal hemorrhage. We usually treat them as shock first, and observe them care-

*Presented before the South Dakota State Medical Association, Aberdeen, May 19, 1926.

fully. We know from what has been written and from our own experience in handling shock that most of the drugs are of little value. Morphine is of value and we always give it, but strychnine, camphorated oil, and so on are of little value. Lowering the head and applying external heat are of some value, but to raise the blood pressure we have to put in something.

We have used normal salt solution, which, as you know, is of only temporary assistance. Within thirty minutes its effect has worn off. A 5 per cent glucose solution holds the pressure up longer, and seems to have better results, but the only thing that will give a lasting effect and keep the pressure up is a transfusion of whole blood. Some of these cases are of great urgency. You do not always have time to get a donor, or type a donor, and do a whole blood transfusion. However, this is not as difficult as we might think if we do not do it frequently.

Our procedure is to first give 5 per cent glucose solution very slowly intravenously. I think this can be done in any place. You need only a 500 c.c. flask of glucose sterilized and kept in readiness. This flask, inverted, can be used as a gravity reservoir for intravenous injection. The patient will always respond to this, and it will help him long enough for you to get a donor for the whole-blood transfusion. Woodyatt says to give it very slowly, using a fine-caliber needle. The tendency is to give it too fast. This can be controlled by using a small needle. If this is done and the fluid is kept warm you will gradually overcome the shock. The thing to determine early is the severity of the bleeding. In profound shock from hemorrhage it is sometimes necessary to open the abdomen and control the bleeding, having the administration of glucose going on simultaneously.

In some of these cases we cannot find a vein large enough to put the glucose in. If you will drop the patient's leg over the edge of the table and use a little pressure you can make a vein stand out on the foot, raising the leg after the needle is inserted.

The ruptured spleen may vary greatly in appearance from slight lacerations with slight bleeding to deep tears through the pedicle and rapid loss of blood. In discussing this matter with Dr. LeCount he pointed out that post-mortem examinations often show healed ruptures which were never diagnosed. Depending upon the extent and position of the laceration, we may have a slight or a fatal hemorrhage. If there is a tear of the spleen into one of the large vessels it is useless to attempt repair. The spleen tears

more easily than the liver, and any attempt to sew a tear will only make a new one. The only thing one can do is to ligate the pedicle and remove the spleen as promptly as possible.

It is quite possible that had this patient been considered as sick as he actually was and placed in bed at the beginning, the secondary hemorrhage would not have taken place.

When there is a rupture that is letting the blood out faster than you can overcome it the measures I have outlined are practically all that can be done. If rupture of the spleen can be diagnosed before the abdomen is opened it would seem that a splenectomy is the only thing to consider. Some cases get by without recognition and without the necessity of opening the abdomen.

In the after-care the patients seem to respond very promptly. They never seem to miss the spleen at all. The first time I removed a spleen was eighteen years ago. We did not make the diagnosis in advance, but opened the abdomen because of hemorrhage. Dr. Tice was the physician in the case and was in the operating room. We found the spleen torn and bleeding, and he advised us to take it out as promptly as possible, saying "they get along beautifully without it." The patient usually makes a prompt recovery, the bone marrow taking up the function of the spleen.

This young man has made an excellent recovery. He is back at work and feels no effect whatever of his accident two years ago.

The transfusion of whole blood is of so great value in acute hemorrhage and many other conditions that it is well to have in every community donors typed and available for emergencies.

CASE 2. *Splenic anemia*—

DR. MURDY: This patient is twenty-five years old and was first seen on December 15, 1925. His parents and two sisters are living and well. Five sisters and brothers died in infancy; cause, unknown. There is no history of carcinoma or tuberculosis in the family.

His chief complaints when first seen were pain in the gastric region, weakness, jaundice and swelling in the abdomen. He gave a history of never having been strong. He had had abdominal pain at intervals ever since he could remember, but it had been more marked during the last year. The first severe attack of pain occurred about a year before he was seen by us, and was a steady, dull pain in the abdomen which was aggravated by eating. This attack lasted about four days and was unaccompanied by fever, nausea, vomiting, or constipation. A second attack occurred in the spring, another in the fall, and the last attack about six weeks before he came in. The attacks were all of the same character as the one described. The abdomen was distended with gas, and this was re-

lied by belching. He stated that he had always been pale and slightly jaundiced most of the time, the jaundice being increased during the attacks of pain. The pain was never excruciating, being more of an ache than a sharp pain.

Examination revealed a man 5 feet 8 inches tall, weighing 143 pounds. The blood pressure was 93 systolic, 58 diastolic. The temperature was 99°F.; the pulse, 88; respiration, 20. The apex beat was visible 12 cm. to the left in the sixth interspace. A loud, blowing systolic murmur was heard best at the apex and transmitted to the axilla, P2 greater than A2. The left side of the abdomen was filled with a large mass that extended over into the right side below the umbilicus. The liver was enlarged 6 cm. below the right costal margin.

The blood picture on various occasions was as follows:

		Before	After
12-15-25:	R.B.C.	2,690,000	
	W.B.C.	4,700	
	Hg.	67	
	Poly neut.	51	
12-22-25: Transfusion given, 500 c.c.	R.B.C.	2,690,000	2,470,000
	W.B.C.	4,700	3,050
	Hg.	67	66
	Poly neut.	51	66
	Small lympho.	46	26
	Large lympho.	2	6
	Eosinophiles	1	1
1-5-26: Transfusion given, 1,000 c.c.	R.B.C.	3,280,000	3,250,000
	Hg.	65	
1-28-26: Transfusion given, 1,000 c.c.	R.B.C.	2,960,000	3,070,000
	W.B.C.		7,150
	Hg.		62
	Poly neut.		75
	Small lympho.		24
	Eosinophiles		1
	Coag. time		7'20"
5-18-26:	R.B.C.	5,120,000	
	W.B.C.	9,350	
	Hg.	85	
	Pmns.	52	
	Small lympho.	28	
	Large lympho.	15	
	Eosinophiles	4	
	Basophiles	1	

An x-ray report on December 16, 1925, stated that the spleen shadow was enlarged, the liver shadow enlarged, and gall-stones visible. Another skiagraph of the spleen on January 30, 1926, showed the spleen greatly enlarged.

On February 3, 1926, a splenectomy was performed. The spleen was greatly enlarged. It weighed about five pounds, was twelve to fourteen inches long and six to eight inches wide. The pathological report was as follows:

"The sections show apparently few follicles, and these seem small with fibrous and hyalin thickening of the veins, and in places congestion of the pulp. This general structure corresponds to the structure of the spleen in splenic anemia, or Banti's disease. The sections were examined by Dr. Ludwig Hektoen and J. J. Moore.

DR. LOUNSBURY: In talking with Dr. Murdy this morning he said the spleen in this case was so large he was not certain whether there was not a form of leukemia, but the blood count would determine that. He said the spleen was quite free, but we usually find that the longer this condition continues the more adhesions there are. This man probably had this condition over a period of years. I think Dr. Murdy would have been safe in making the diagnosis from his blood picture. It is that of a secondary anemia. In this disease we do not usually have the enormous spleens that we get in myelogenous leukemia, but the blood count suggests the diagnosis. There is usually little difficulty in determining this point.

Because of the icterus one might consider whether or not the patient had the hemolytic type of jaundice. Apparently this was not the case. From the pathological check-up of the spleen and the blood findings they were dealing with an anemia of the secondary type.

The spleen, looked at from the viewpoint of its function, supplies the white cells and acts as a filter for toxins and destroys red cells. Because of some derangement of the other organs, some stimulation, the spleen shows an abnormal activity. It may destroy more red-blood cells than it normally should and thus produce a secondary anemia, or there may be an abnormal production of lymphocytes and myelocytes, and we have a leukemia.

There has been a question as to the best method of treating the spleen. The spleen itself not being the cause of the pathology, we do not remove the pathology in removing the spleen. We break up a cycle, and if we take away the agent that is destroying the red-blood cells, even though we do not take away the exciting factor, we have made it impossible to go on with the destruction. This accounts for the rapid recovery, back to normal or nearly normal, when the spleen is removed in these cases. I think there is no doubt about the therapy when once the diagnosis is made.

There is some difference of opinion concerning the myelogenous type of leukemia. The medical men believe that shrinking the spleen by means of radiation is the only thing that should be undertaken. Some of the men with the most experience say that because of the mechanical conditions and difficulties encountered in getting some of the large spleens out, with their many adhesions, radiation should be used first. After this the blood picture will change from a leukocytosis of 300,000 to 100,000,

or even 50,000, and the spleen will shrink to one-third its size.

We have two cases of myelogenous leukemia under observation now. One woman came in in February with a leukocytosis of 300,000. Roentgenotherapy was instituted on February 13, and she now has a white count of 60,000 with the spleen down to one-third the size it was. It is a question now whether, with the mechanical difficulties of its removal overcome, we would be warranted in taking out the spleen. We do not know what started the activity of the spleen in increasing the white count. With the spleen down to where it might be safely removed it is a question whether a cure might not be effected by its removal. Mayo has recently said that if the medical man cannot show some good reason why the spleen should be retained, and the mechanical difficulties can be overcome, the spleen should be removed because of the possibility of the continuance of the dysfunction. If it is removed the vicious circle is broken up.

There are two other conditions in which there is no question about the proper therapy, lytic jaundice, and purpura. In hemolytic jaundice perhaps 50 to 60 per cent of the cases are accompanied by gall-stones. An attack of gall-stone colic may mislead us in the diagnosis. In the hemolytic jaundice there is an absence of bile in the urine and the presence of the bile in the stool, so we are not dealing with an obstructive jaundice. Whenever a diagnosis of hemolytic jaundice can be made the spleen should be removed.

In cases of purpura, where the blood easily filters through all the tissues, all are unanimous regarding the advisability of removing the spleen. In definitely determining the diagnosis in purpura the test of the arm-constrictor, shutting off the venous circulation without shutting off the arterial will leave the petechial spots below the tourniquet.

In all of these cases, pre-operatively and often post-operatively, blood transfusion is indicated and will be of great assistance. It makes the operation much less dangerous, and will restore the patient much more rapidly.

I do not think I can say anything about the splenomegalies due to secondary infections. We can overcome the condition by removing the infection. In osteomyelitis we have had several instances of appreciable enlargement of the spleen, but when the source of the trouble is removed the spleen usually will take care of itself.

While this young man was almost an invalid before his splenectomy he is now able to do his

ordinary work and go along in a normal way. If it becomes necessary to operate for the gall-stones he is in good condition to stand it.

CASE 3. *Oblique fracture of humerus—*

DR. MURDY: This woman is forty-eight years old and came to us on April 14, 1926, complaining of pain in the left arm and shoulder, with swelling and discoloration and inability to use the arm. There is nothing in the family or previous history that has any bearing on the condition at that time. The patient stated that she had slipped and fallen on a waxed floor about 7:15 P. M., April 13, striking the left shoulder. She experienced great pain and was very helpless.

A skiagraph revealed an oblique fracture of the upper portion of the humerus, with the fragments slightly misplaced and angulated.

The fracture was reduced under local anesthesia and the fluoroscope, a triangular splint being used to bring the distal fragment in line with the proximal. A skiagraph taken immediately after the reduction showed the fragments in good apposition, and another taken on May 12, 1926, showed the arm in good condition.

DR. LOUNSBURY: In the oblique fractures of the humerus the greatest problem is the obliquity. If the musculospiral nerve is pinched we have an added difficulty. In some of the more severe types where the neck of the humerus is fractured, with more or less displacement of the head, we have been putting them in Buck's extension, lining the long fragment up to the short one. In cases with dislocation of the head this cannot be done. The head is often rotated so that the articular surface is in contact with the fragments of the shaft and in these cases an open reduction is indicated. In this type the greatest care is necessary in opening the joint. The easiest approach is by Langenbeck's incision, splitting the deltoid downward from the tip of the acromion. This will obviate damage to the circumflex nerve and give excellent exposure of the joint. In this case (presenting patient) open reduction was not necessary. The Middelдорpf triangle, which Dr. Murdy has made, serves very nicely.

In the treatment of a fracture at the neck where there is displacement of the head, the earlier you determine upon open reduction the easier it will be to carry out the treatment. Anything less than that will give an unsatisfactory result. In the treatment of the shaft lower down, where there is danger of damaging the musculospiral nerve, the open reduction is also necessary, with protection of the nerve. This can be accomplished in two ways: by Parham bands or Lane plates. I am not an advocate of open reduction where the closed method will do as well, but in some fractures the open method is necessary. Nothing acts so well in these

oblique fractures as the Parham band. It is strong, easily applied and does the minimum of harm to the periosteum. In Albee's book on fractures he shows one that looks as if it had been cut off with a saw. He is right in saying that the circulation is destroyed by putting on a circular wire, but with the Parham band we cannot get the same condition that obtains with a wire. The Parham band is comparatively loose, and when the parts tend to jam past each other they come into the ring and tighten up. This irritation increases the callus formation.

By banding these oblique fractures we prevent pinching of the musculospiral nerve, and minimize the danger of bone deformity.

CASE 4. Fracture and displacement of left epiphysis of radius. Fracture of ulna—

DR. MURDY: This little patient is ten years old and was brought in on April 30, 1926, because of pain and deformity of the left forearm. He gave a history of falling off a tree and landing on the ground with the body weight on the left arm. There was deformity of the wrist, with some swelling and it was very painful on manipulation.

A skiagraph at this time revealed a fracture of the distal end of the ulna, with anterior and lateral displacement, and fracture of the epiphysis of the radius.

The fracture was reduced under general anesthesia, and a skiagraph taken on May 7, shows the fragments in good apposition.

DR. LOUNSBURY. This case is interesting because of the epiphyseal separation at the end of the radius. I think you can all see this condition in the skiagraph (indicating picture). It would have been Colles' fracture if the child had been older, but with a child of this age the epiphysis is the weakest point. The second picture shows the result which Dr. Murdy has accomplished (indicating). It is excellent. The posterior moulded-plaster splint is very comfortable and effective.

In a Colles' fracture where we have inversion and backward displacement the condition is brought about by a fall on the outstretched palm. Sometimes the patient comes straight down on the hand and we have an upward displacement of the lower fragment, with broadening of the wrist. If it is displacement backward and medially all of the muscular strain is at an angle. The patient will always be weak in the hand until that mechanical line is straightened out. The grip is greatly weakened.

In the third type the lower fragment is forced forward and again the grip is weakened by the muscular unbalance. With the fall straight down resulting in impaction without displacement forward or backward there is good

function, while in the untreated Colles', with the backward and medial displacement, or the forward displacement, the patients have bad wrists because of muscular unbalance.

In this case the result is excellent, and the slight tilting backward which you can see in the skiagraph will be overcome by the growth of the bones.

QUESTION: How long would you keep that fracture up?

DR. LOUNSBURY: For eight weeks. No two individuals make bone and callus with the same rapidity. I think where we have radiographic facilities at our disposal it is better to be governed by the skiagraph, but I should say eight weeks. Children make bone much more rapidly than adults, and we might be able to take the splint off in six weeks. In cases of deficient callus formation I use cod liver oil and find it of considerable assistance.

QUESTION: How long would you keep a Colles' fracture up?

DR. LOUNSBURY: Ordinarily three to six weeks. I never fasten a Colles' down to the tip of the fingers. These are left free and have the patient exercise the fingers every day. After the first week we take the splint off every day and have very light massage given to relieve the edema. We always keep patients under observation to see that we are not depending upon a callus that is too soft, and that dysalignment does not occur.

CASE 5. Fracture of neck of femur—

DR. MURDY: This man is eighty-one years old and came in on October 1, 1925, complaining of pain in the right hip, and leg. His father died at sixty-six and his mother at ninety-one, both from pneumonia. One sister died of tuberculosis, one of an unknown cause, and a brother died of old age. He has one sister living, in poor health.

The patient stated that at about 3:00 P. M., on October 1, he was pulling a laundry bag into the kitchen. After bending over and straightening up he experienced a dizzy spell, at which time he fell to the floor, striking on his right hip and shoulder, and hitting his arm on a near-by chair. He complained of considerable pain in the whole right leg.

Examination was negative, except that the entire right foot was in complete external rotation. A skiagraph revealed a fracture of the neck of the right femur, with upward displacement of the femur.

DR. LOUNSBURY: This man is well along in years being eighty or over. A fracture of the neck of the femur is a serious matter in a man of any age, but when it occurs in the aged we have present not only all of the factors which tend toward non-union, but the possibility of other serious complications attendant upon old age. There is a great difference in fractures of

the neck of the femur. Depending on whether or not they are within the capsule or outside of the capsule, we have a greater or less chance of bone union. When the neck is fractured within the capsule, the synovial fluid acts as an antagonistic factor to prevent bone callus. Its function is to absorb callus and keep the joint in motion. This is true in fractures within the capsule regardless of the age of the patient. Again, at the hip we have the great problem of applying the principle of immobilization. The unusual mobility of the hip, combined with the action of the synovial fluid, is a great handicap to the production of bone callus and bone union. The fracture outside of the capsule on the other hand is not hampered by the action of the synovial fluid, and immobilization there is often accomplished by impaction, which by careful handling, may not be loosened.

There has been a great deal of discussion as to the best method of handling fractures of the neck of the femur and especially the problem with the aged. Whitman advises a complete abduction with a spika-plaster cast from the crest of the ilium to the sole of the foot. This he recommends in all cases regardless of the age. Mechanically the complete abduction brings the fractured neck into full reduction and in this respect is ideal. The objection to the application of the cast in the aged has been raised by some on the ground that it places the patient on his back and favors hypostatic congestion of the lung with the possible development of pneumonia. It has been shown that where the cast is applied with complete abduction leaving the opposite

leg free, the patient is able to sit up in bed with the good leg on the mattress and the injured leg off outside the bed, bringing the patient's body and injured limb to a vertical line, leaving the good limb at right angles with the trunk and have the patient sit on his buttocks. The alternative offered by those who object to the cast has been the placing of the limb at rest in bed holding the foot in the desired position with sand bags, or placing the limb in a Thomas splint and suspending it in a Balkan frame. It has been our experience that patients, regardless of age, have been more comfortable in the plaster cast than they were in either the suspension or the partially mobilization with the sand bags. Whenever the patient who is not in the cast has to be moved on his bed there is more or less disturbance at the site of fracture, which, in the early stages is accompanied by pain. All of this is obviated by the plaster immobilization. With everything considered I feel that the chances for a bone union are better when the limb is in the complete abduction, and immobilization is as perfect as it can be made with plaster. There will be a large percentage of failures of bone union in the intracapsular type regardless of what treatment is employed, and the percentage will increase with the age periods, the highest percentage, of course, being in the more aged. Open reduction and bone pegging in the type where bone union has failed should be undertaken only in the second age period or the first part of the third age period or in specially selected cases where the physical condition of the patient is favorable.

TETANUS*

By WILLIAM G. KEMPER, M.D.

MANITOWOC, WISCONSIN

Tetanus is a disease which is not frequently met in general practice, yet it has been my privilege to have had three cases under my care besides two that I saw under the care of other physicians.

Tetanus is an infectious disease characterized by both tonic and clonic contractions of all the voluntary muscles of the body, beginning in the jaw and spreading to the trunk and extremities.

The Tetanus Committee of the British War Office advocate the use of 1,500 units of anti-

tetanic serum at intervals of seven days, and recommend that in the treatment of acute tetanus large doses should be employed, and cite 24,000 units on the first and on the second day. One writer mentions a patient who recovered after he was given the enormous dose of 236,500 units by spinal puncture. This amount was given in divided doses under chloroform narcosis. Yet Cummings, an army surgeon, comes to the conclusion that "the prophylactic use of antitoxin has reduced the incidence of tetanus and has led to the modification of the clinical type of the disease, but there is as yet no statistical evidence

*Presented at the annual meeting of the Soo Surgical Association.

to show that antitoxin has been valuable in the treatment of tetanus," and Wheeler, another war authority, states that "up to the present time as regards the therapeutic effect of tetanus antitoxin the evidence is still inconclusive." Graf-fagnino and Davidson, writing in the *New Orleans Medical and Surgical Journal*, present an analysis of tetanus infections recorded at the Charity Hospital during seventeen years up to 1923, and find that in 273 cases treated with antitoxin the mortality rate was 66.6 per cent, and in 304 cases treated without antitoxin it was 68.08 per cent. This rate varied very little, no matter whether 500, 1,000, or 100,000 units were administered. But a marked decrease of the death rate was observed in 14 cases in which a prophylactic injection had been administered, with a mortality of 28.57 per cent.

Thus the average mortality rate is high, the result of the antitoxin treatment being apparently a trifle lower than that of other methods. The prophylactic treatment is always indicated.

Many writers advise vigorous treatment of the wound by laying it open, cauterizing it, or irrigating it with various antiseptic solutions. Others, on the contrary, clean the wound as often as necessary, but otherwise leave it undisturbed.

While most of the articles on the care and treatment of tetanus infection strongly emphasize the necessity of employment of antitoxin in massive doses intravenously or, better still, intraspinally, but few lay much stress on other, or additional, measures of cure. I am convinced that, with but very few exceptions, any case of lockjaw of more than moderate severity with the frequent agonizing spasms superimposed upon the long-continued rigid contractions will succumb to exhaustion in a few days irrespective of the amount of antitoxin employed unless quieting and sustaining remedies are regularly administered until the virulence of the toxin has ceased to exert its poisonous action.

Many years ago, while a student in Rush Medical College, I was shown a case of this disease in the Cook County Hospital. I particularly remember the peculiar position of the patient who was lying on his side in rigid opisthotonos, and every few minutes was overcome by an extremely painful convulsion. The attending surgeon told us casually that the man would die, which he did in a short time.

Another case of mild character I saw in consultation with another physician in my early practice. The muscles of the jaw, neck, and shoulder chiefly were affected. This child, seven years of age, recovered in a comparatively short time un-

der the treatment of bromides, chloral, and hot baths.

CASE 1.—Twelve years ago I was called to see a man, aged 30, who had had an arm torn off by a belt which became detached from a farm machine, and who had fallen into the mud of a filthy barnyard. I amputated the arm four inches below the shoulder through apparently clean tissue. On the fourth day he complained of severe pain, and upon examination I found the bone protruding. He had short, frequent paroxysms of pain and spasmodic contractions confined to the muscles of the injured stump. Most writers on tetanus maintain that the muscles of the jaw and the neck are the first to be affected irrespective of the position of the wound, but in this case trismus did not come until later. I reamputated at the shoulder-joint the same day, and the next morning general tetanus of a severe type had supervened. The body curved backward with head retracted, was rigid, and the jaws were tightly closed; and torturing paroxysms occurred every few minutes. A creaking door, a falling pencil, a breath of air, or any sudden sound brought on a paroxysm. These spasms interfered very much with the dressing of the wound, which consequently required frequent cleansing and irrigation. For this purpose I used hydrogen peroxide which I think an ideal remedy under the condition. Large hypodermics of morphine controlled the pain, but twenty-grain doses of chloral hydrate by rectum were added to quiet somewhat the concurrent contraction. During the first week three 1,000 units of antitoxin, 3,000 altogether were given subcutaneously. After this morphine and chloral alone were continued in sufficient quantities to control the painful spasms. He received nourishment every day, either by mouth or by rectum. Laxatives or enemas were administered when required. For a time the spasms of the sphincter muscles made the introduction of food and medicine very difficult. His temperature reached 105° for a few days. The spasms and contractions slowly improved, but after six weeks there was still some stiffness in the muscles of the back.

CASE 2.—A few months later I was called to attend a boy, aged seven. He was having severe painful spasms every few minutes. He could not open his mouth wider than one-half inch and several times had bitten his tongue. Opisthotonos was pronounced, with head drawn back, spine concave, and feet extended. He was as rigid as a wooden image. I was unable to find any evidence of a wound, but his mother told me that a week previously he had fallen on the street and had abraded his elbow. I managed to get a piece of rubber between his teeth, which, by careful watching, was kept there for several days. He was given 1,500 units of antitoxin that day subcutaneously and 1,500 the third and fifth days, 4,500 altogether. A hypodermic of one-half grain of morphine and ten grains of chloral hydrate repeated every four hours controlled the pain and frequency of the spasms. Thus the boy was kept in a more or less somnolent condition for several days, when the doses were gradually decreased. Liquid food was given him frequently by the rectum until he was able to swallow. His temperature reached 103° for several days. After the seventh day the rigidity gradually relaxed and the paroxysms became less frequent, and by the

end of three weeks he had practically recovered.

CASE 3.—On July 1, 1922, a boy, aged five, fell on a lawn-mower, severely cutting the palm of his hand on one of the blades. Several days later his mother thought he was getting the mumps because he was unable to open his mouth wider than one-half inch. I recognized a case of tetanus and the same day gave him subcutaneously 5,000 units of antitoxin. The next morning he had assumed the typical posture. The body bent backward in the form of an arch and was very rigid, and painful convulsions occurred every few minutes. He received a second dose of 5,000 units of tetanus antitoxin, one-sixteenth grain of morphine hypodermically and five grains of chloral hydrate by rectum. The same amount of morphine and chloral was repeated in an hour. For several days following he received one-twelfth to one-sixteenth grain of morphine hypodermically and ten grains of chloral by rectum every four or five hours which effectually controlled the pain and spasms, but had little effect on the rigid muscles. He received 30,000 units in all during the first week. The wound of the hand was frequently irrigated with antiseptic solutions. Food was administered regularly and frequently by the mouth or by the rectum, and laxatives or enemas were given from time to time, as the case demanded. On the twelfth day his legs became more movable and on the fourteenth day he was able to roll over in bed; but up to the twenty-first day he was not able to sit erect on account of the stiff concavity of his back. Temperature reached 102.8° on the fourth day of his attack, then it slowly declined. At the end of the fourth week he was quite well.

The fact that these three patients, all of whom were afflicted with a severe type of the disease, recovered, would lead one to believe that the antitoxin was the curative agent, but the amount of serum used was negligible when compared with the doses recommended by many writers. And it was introduced subcutaneously, whereas many of these writers maintain the absolute necessity of intravenous or intraspinal injection. The first case, a powerful man, received 3,000 units subcutaneously. Compare that with the patient spoken of who received 236,500 units intraspinally, and whose recovery was ascribed to the amount of serum used and the method of introduction.

It would seem, therefore, that of tetanus antitoxin, its dose, its method of administration, and its value as a curative agent, is undetermined, and I believe that quieting remedies in full doses, regular feeding and efficient nursing are of prime importance.

DISCUSSION

DR. DEFORD A. BRONSON (North Fond du Lac, Wis.): The most characteristic point and the one that should have the greatest emphasis in considering these cases, is that when one can make a diagnosis of tetanus the patient is dying. The patient has not just begun to contract tetanus: the pathology is far advanced. Therefore our treatment, to

be effective, must be prophylactic. We cannot do anything in most cases of developed tetanus. A few cases, as those cited by Dr. Kemper, can perhaps be treated successfully, but the mortality is about 100 per cent after the patient develops the characteristic convulsions of tetanus. If I remember rightly, it was in 1884 that the bacillus tetani was first isolated, and in 1890 the vaccine was produced. Previous to that time the treatment was purely symptomatic, and, of course, with high mortality. The U. S. Army records show that, considering the number of men wounded during the World War, the incidence of tetanus was practically nil. Probably all of those men received at least 1,500 units of antitetanic serum, which is the usual prophylactic dose that is given at this time.

The question arises as to when to give this prophylactic dose. In railway surgery it is very important to know when to give it and when not to give it. It seems to me that we should give it in every case of trauma, but we do not do it, and I would ask Dr. Kemper how often he gives antitetanic serum?

DR. KEMPER: When I suspect the infection is present.

DR. BRONSON: That is a little difficult to determine, because this disease is caused by a systemic toxemia from a local infection, sometimes without any suppurative whatever. Often the most minor injury, as a slight punctured wound of the foot, will cause tetanus. Of course, in the case of a punctured wound, especially one caused by a rusty nail, we usually administer antitetanic serum. Sometimes a minor injury is overlooked. Therefore, it seems to me it would be advisable to give the serum in every case where we cannot properly open the wound and clean it out.

There is one point about the tetanus toxin that is rather interesting. It is said by some that this toxin is the most poisonous substance known. The toxin has been divided into two substances: one which is known as "tetanospasmin," and the other as "tetanolysin," the first acting directly on the nerve tissue, while the tetanolysin acts upon the blood corpuscles which take up this toxin and later the blood corpuscles are found dissolved. These studies show that the last-named substance acts directly on the blood, while the former is carried through the motor nerves to the motor ganglia. Any sensory stimulus, no matter how slight may bring on a spasm. Of course there is more or less clonic spasm all the time. It is not like strychnine poisoning, for in tetanus the patient is never entirely relaxed.

Park and Nicoll (*Jour. A. M. A., Vol. 63, No. 3, p. 235*) state as follows: "A series of experiments on guinea-pigs was undertaken with the object of determining to what extent tetanus antitoxin given in the spine has greater curative power, when the disease is actually established, than when given in the circulation. The comparative ineffectiveness of subcutaneous injections of tetanus antitoxin in developed cases is incidentally brought out.

"In every case strongly suspected of being tetanus, from three to five thousand units of tetanus antitoxin should be given at the first possible moment intraspinally, slowly by gravity, and always, if possible, under an anesthetic. In order to insure its thorough dissemination throughout the spinal

meninges the antitoxin should be diluted, if necessary, to a volume of 3 to 10 c.c. or more, according to the patient's age. When fluid is drawn off before the giving of the antitoxin, an amount of the latter somewhat less than that of the fluid withdrawn should be given. In brief, tetanus antitoxin should be used in precisely the same way as anti-meningitis serum.

"Unlike experimental tetanus it must be remembered that in the human type of the disease there is frequently a focus constantly pouring out more and more toxin, for which reason it is probably advisable to repeat the intraspinal injection in twenty-four hours. While unquestionably the blood will soon become antitoxic through this intraspinal use of antitoxin alone, yet in order to insure the quickest possible neutralization of all toxins in the tissue-fluids, it would seem advisable to give at the same time a dose of 10,000 or 15,000 units of antitoxin in the vein. A similar dose given subcutaneously three or four days later will insure a continuance of the highly antitoxic condition during the next five days."

DR. PETER J. CHRISTOFFERSON (Waupaca, Wis.): In all my practice I have had only four cases of tetanus, and, as Dr. Kemper has said, the antitoxin as a curative remedy does little good. Of these four cases, three patients died, and they certainly had antitoxin enough and had it early.

One case was that of a boy twelve years old who had stepped on a shingle-nail. As no symptoms developed for ten or twelve days, no attention was paid to the injury. The boy was brought to the office one morning, nervous and excitable, and appearing as though he experienced fear. I observed him for a time and asked if he had been injured in any way, and the father said that a nail had penetrated the foot about ten days before, but the injury had not bothered him. I gave him water to drink and he had difficulty in swallowing, so I began to question him. Any noise like a door slamming would excite him. I suggested the use of antitoxin, but the parents had heard the chiropractors say that anything injected into a patient was poisonous and would cause disease, therefore, they did not wish it used, but finally they consented and I gave the boy 5,000 units intravenously. After forty-eight hours he seemed better, then had spasms, and I was discharged. They called in another doctor, but did not want any more antitoxin used, and other doctors came into the case. That boy had in all 155,000 units of antitoxin, but it did not control the spasms. We gave him chloral by rectum and morphine at different times to control his spasms, and at the end of four weeks he had recovered.

Another case was that of a man, aged sixty, who had fingers cut off in a wood-saw. In the case of a little girl who was in convulsions when I first saw her, she also had a nail puncture of the foot.

DR. GEO. F. THOMPSON (Chicago, Ill.): In recent years we have not seen much tetanus in Chicago because industrial surgeons are giving the prophylactic dose early; therefore our experience with tetanus is not common.

The prognosis of tetanus is influenced by the treatment, but, I think, the main factor in the consideration of tetanus, borne out by Dr. Christofferson's four cases, is the length of the incubation period. The only patient that recovered in his

series had an incubation period of twelve days. The great trouble with statistics is that they do not tell the length of the incubation period. If the incubation period is less than nine days the patient is going to die irrespective of the treatment given. A large number of cases brought to the Cook County Hospital bears this out. Therefore, if we can determine the length of the incubation period we can make the prognosis accurately. In my experience I have never seen recovery in a case having an incubation period of less than nine days.

In many cases in which the prophylactic dose of antitetanic serum is given early, the patient will develop symptoms of tetanus a week or ten days later, but it is a modified case. So those who have had extensive experience in the use of antitoxin recommend its repeated administration. The whole thing in tetanus is prophylaxis. In the first place the antitoxin should be immediately used in all wounds, and especially penetrating wounds, when the giving of a prophylactic dose of 1,500 units is ordinarily sufficient. Larger doses may be used in cases of more extensive wounds.

The second point is that in a case of extensive laceration of tissue débridement of the wound should be done. If the wound is not large, but punctured, it should be laid open and kept open because the tetanus bacilli are present at the site of injury, and if they are destroyed locally the patient will not develop tetanus. The early treatment of those wounds is essential if we are to prevent tetanus.

I repeat that if the incubation period is less than one week, I do not believe that any treatment or any amount of antitoxin we may give will avail; practically all these patients are going to die.

DR. ARTHUR A. LAW (Minneapolis, Minn.): I am glad to hear what Dr. Thompson said about the incubation period. When the incubation period of tetanus is under a week, I have never yet seen the patient recover.

It is interesting to hear reports from men in the smaller communities. They see much more tetanus than the city man. I was interested a few years ago in looking up the statistics of tetanus in the records of three great transcontinental railroads on which there had been a total of nearly 400,000 industrial injuries. On those roads, only seven cases of tetanus occurred. One road, with 150,000 injuries covering a period of ten years, had no cases of tetanus. In a great mining company, with 300,000 industrial injuries, they had no cases of tetanus. In the state of Minnesota five industrial cases of tetanus were reported. There must be some reason for the small number of these cases in industrial work. In the Great War, which was fought over terrain that had been fertilized for centuries, many times with human excreta, the incidence of tetanus was very high. I had a friend who served in the German army during the early days of the war, and he said the incidence was so appalling that hundreds of soldiers died of tetanus before the officials appreciated that a prophylactic dose of antitetanic serum should be given in every case of wound. The American army had learned the lesson that the German and the Allied armies had taught in the early days of the war, and every man got his dose of tetanus antitoxin. If in the case of a wound the soldier did not have a T on his forehead, and his field medical card did not show that he had

received the prophylactic dose, it was given to him, even though a dose might have been already administered. Therefore the incidence of tetanus was cut down to almost nothing in the American army. I had only three cases of primary tetanus. In our great center of 25,000 beds we had a good many cases of tetanus, not one of which was primary, every single case was secondary. The army officers and surgeons finally appreciated the importance of this phase of tetanus, and the Surgeon-General issued an order: "No secondary operations are to be made within a week after the primary operation without another injection of antitetanic serum." These war wounds were all débrided. We cut out all the contused tissue, getting down to clean tissue, and the primary and secondary closures were made after the bacterial count was down to one bacterium, yet the Surgeon-General sent out the order that no secondary operation should be made on any soldier without an additional prophylactic dose of antitetanic serum. The primary cases of tetanus all died. Tetanus bacilli will lie dormant for a long period of time unless they are stirred up. Secondary operative intervention stirs them up and causes tetanus, which is not nearly so virulent. Of the three cases I had, two recovered and one died. In a severe case the patient dies irrespective of what we do. We gave 200,000 units into the spinal canal; we gave it subcutaneously, along the course of the nerves, and intravenously. It is the secondary cases, not the primary cases, which have a chance to get well.

DR. GEORGE G. EITEL (Minneapolis, Minn.): In industrial clinics, in medical schools, etc., we have always been exhorted to use antitetanic serum. At the meeting of this Association in Minneapolis last year I heard several men make the statement that they had never seen a case of tetanus although they had treated many injury cases. I heard one man say that he had never had a case of tetanus, and another man said he had given up the use of the prophylactic dose of antitetanic serum. My opinion was about the same before reading of a group of cases of tetanus that developed following the use of antitetanic serum. I thought that possibly one could not expect any more from antitetanic serum than from any other antiprotein injection. Within the past year I had occasion to discuss this subject with a veterinarian of my community, a college graduate and an intelligent man, and he said that in the past three years he had lost eighteen animals from tetanus. In thinking about that it has seemed to me that veterinarians could in all probability contribute something to our knowledge of this disease. We probably do not see many cases, but animals are exposed to the infection through coming in contact with infected soil, therefore veterinarians see a great number of infectious cases of various kinds, and the man I have referred to has seen a large number of cases of tetanus alone. I was under the impression that possibly my part of the country was not infected with tetanus.

Therefore, if there is any possibility of protecting men against this disease, the prudent thing to do is to give the prophylactic treatment even if we are not convinced of its power fully to prevent development of tetanus.

DR. JOHN H. RISHMILLER (Minneapolis, Minn.): Tetanus is purely a toxemia produced by the tetanus bacilli, the spores of which may remain quiescent or latent for a long period of time and which may be aroused to activity by manipulation, such as reducing a compound fracture, operative interference or transporting the patient from one place to another. The tetanus bacillus infests mainly agricultural districts. The wounds contaminated with barnyard or highly cultivated garden soil and those produced by dragging in the street dust are especially liable to be infected with tetanus bacilli. It is also very prevalent about horse stables and dung, in fact, one might say that we have less tetanus now than formerly on account of the marked increase of automobiles. We would naturally have more tetanus in this great northwestern agricultural territory than among mining districts; furthermore, one would not be very apt to contract tetanus on road beds of railroads, which are made up of gravel and sand. This is an explanation of why we have few cases of tetanus among railroad employees and miners.

Contused, lacerated, and gun-shot wounds offer ideal conditions for the development of tetanus bacilli, and for this reason the proper care of wounds is the most important prophylaxis in the prevention of tetanus. Devitalized tissue, which implies recession of circulation, is one of the best culture mediums for tetanus bacilli, as they particularly thrive in dead organic tissue in the presence of hydrogen. Therefore we must consider that the proper treatment, first, is to remove the source which supplies the toxin; second, to neutralize the toxins which are being formed; third, to depress the hyperexcitability of the spinal cord; and, fourth, to administer nourishing food to tide the patient over the most stormy period.

Experimentations by Sherrington (Lancet, Vol. 193, No. 2) on small animals has demonstrated that the intraspinal route of the administration of antitetanic serum has given the best therapeutic results and the mortality rate has been far less than by any of the other methods, subcutaneous, intramuscular or intravenous.

Everything that we know about anaphylaxis from the experimental side points to the intravenous as the most certain route for producing shock, except perhaps the intracerebral.

It is well agreed that 1,500 units of antitetanic serum is the proper prophylactic dose. We need not fear anaphylaxis from the first prophylactic dose.

DR. KEMPER (closing): I do not believe that any one would use the antitoxin in every case of injury which comes to him. In any case of punctured wound it might be considered advisable, but for ordinary scratches or slight wounds antitoxin treatment is not often considered. I never have used it unless I had reason to think that tetanus germs might be present, or in wounds resulting from Fourth of July fire works.

It has been shown that prophylactic doses of antitetanic serum will reduce the mortality of tetanus, but it is questionable whether it has any curative value.

THE CONTROL OF THE RESPIRATORY GROUP OF COMMUNICABLE DISEASES IN A DIVISION IN CAMPAIGN*

BY SAM F. SEELEY, M.D.

Military Essay, University of Minnesota, awarded the Hennepin County Medical Society prize.

MINNEAPOLIS, MINNESOTA

The control and prevention of communicable diseases within the area occupied by a division is primarily the duty of the Medical Regiment. A Medical Regiment is organized to serve each Division, and the main functions of the Medical Officers are of an inspectorial and advisory nature. Their recommendations are made to the line officers who are responsible for the enforcement of sanitary and hygienic conditions within their respective units.

A division consists of approximately twenty thousand men. The Medical Regiment consists of sixty officers and eight hundred eighty-two enlisted men, divided into a Collecting Battalion, Ambulance Battalion, Hospital Battalion, and a Service Company. This organization during combat is for the purpose of caring for the wounded and sick, giving them first aid treatment at the Collecting stations, where they have been transported from the Battalion and stations by members of the Collecting Companies, and taking them back to the Hospital Company set up three to five miles behind the Collecting stations. Men are treated there and then taken to the Evacuation hospital to the rear of the division area. At the Evacuation hospitals men are treated, sorted, and sent to the various Base hospitals or prepared for embarkation to homeland hospitals. In campaign the patients with communicable diseases must go through much the same routine.

It is obvious that important as hygiene and sanitation are, they must sometimes be ignored. When a Division is in active combat, and the wounded are being transported through the several units of the Medical Regiment and are being taken to the Evacuation hospitals, there is no time to consider the control of communicable diseases unless a man is severely stricken with pneumonia or some similar affection. Armies exist in order to win battles, and sanitary and hygienic measures must ever be subordinate to the prime effort to obtain that end. Military exigencies must predominate. But as soon as fighting ceases, sanitary and hygienic measures for the purpose of keeping men fit to fight should come to the fore. Troops are

withdrawn for rest and reorganization, bathing, delousing, fresh clothing and equipment, and for mental relaxation. There is danger here of spread of diseases because the troops tend to become lax and there may be infections resulting from diseases of the enemy previously occupying the territory. Officers are doubly vigilant at this time.

Sanitation within the Division area must be carefully observed as it is especially important in the prevention and control of all communicable diseases. In this area civil control is very much disorganized, if not completely paralyzed, and, in consequence, the army must institute measures and deal with the transmissible diseases among the civil population to a great extent.

Behind the Division area is the communication zone. Here sanitation must be kept up to avoid carrying disease into the Division area, and to avoid dissemination of disease by troops who are being transported from the Division area to the rear.

Personnel for the sanitary service of the army are obtained from the Collecting companies of the Medical Regiments. Army areas are divided into administrative subdivisions, known as sanitary sections. One commissioned officer, who is responsible for conditions in each section, should keep in constant touch with Corps and Division Surgeons in his area, furnishing them with all information at his disposal. Such arrangements assure adequate sanitary supervision. This keeps guard over the area occupied, facilitating the task of incoming troops, keeping the army authorities constantly informed of prevailing conditions and needs.

In a Division area men who are sick report to the infirmaries for medical attention. If their condition warrants it they are taken to the Evacuation hospital. Active cases may be cared for by the hospital stations if there is no combat necessitating the use of those facilities or may be transported to the Evacuation hospitals. When there is not a stream of wounded pouring into the Evacuation hospitals the cases of men with communicable diseases are cared for in wards set aside for that need. But should the Evacuation hospitals be hard pressed, care of

*Presented before the Hennepin County Medical Society, October 6, 1926.

communicable diseases necessarily becomes a secondary object, and the men must be transferred to separate wards or taken to contagious sections of base hospitals.

Carriers and suspects need not be evacuated. They may be isolated from the others and put on a working quarantine. In this way they do not crowd the hospitals unnecessarily, and are available in case of combat.

Mild cases of communicable diseases, such as German measles, common colds, Vincent's angina, etc., are not hospitalized, but are cared for within the Division area by segregation. They must be handled in this manner so that maximum efficiency of fighting forces will always be maintained.

An important factor in the prevention of epidemics is the distribution of immunes and non-immunes. Those that have not had transmissible diseases should be so distributed that no organization contains an undue number of susceptibles, being made up, as far as possible, of a mixture of immunes and non-immunes. This would avoid the unfortunate condition of army hospitals being overwhelmed and demoralized by massive outbreaks of infectious diseases. In a way this might be accomplished by a more thorough mingling of urban and rural recruits.

Of all the communicable diseases the respiratory group is probably most important. The principal affections known to be or strongly suspected of being transmitted through discharges of the respiratory tract are measles, mumps, diphtheria, scarlet fever, the common respiratory diseases including coryza, acute laryngitis, acute pharyngitis, acute tonsillitis, acute bronchitis and pleurisy, influenza, the pneumonias, cerebrospinal fever, pulmonary tuberculosis, pertussis, pneumonic plague, septic sore throat, and Vincent's angina.

Commanding officers should devote particular attention to the enforcement of the following general preventive measures for the control of any of the diseases of this group:

1. Elimination of overcrowding.
2. Proper ventilation of quarters.
3. Allowance of more than authorized floor space, when possible.
4. Forbidding of promiscuous dissemination of sputum and other discharges of the respiratory tract by coughing, spitting, sneezing, or use of mutual towels or drinking cups.
5. Issue of suitable clothing.
6. Issue of sufficient bedding to prevent chilling of men while asleep.

7. Thorough cleansing of hands immediately before eating.

8. Proper sterilization of dishes and mess kits.

Special measures, such as isolation of cases, physical inspections, hospitalization of suspects, and control of contacts and carriers are of prime importance. Details of their application will be referred to under the diseases taken up separately.

Pneumonia.—Pneumonia is the most common cause of death in the U. S. Army during peace. It is an infectious disease disseminated by spitting, sneezing, coughing, and also by infected eating utensils. It may be transmitted by patients suffering with pneumonia, contacts, carriers, or by patients suffering from "colds" due to pneumococci. It is frequently a complication of measles or influenza. As soon as a case appears the patient should be immediately segregated and evacuated if possible. All secretions from the throat should be burned, and soiled linens, clothes, blankets, etc., should be disinfected. Every effort should be made to protect a pneumonia patient from exchange of bacteria with fellow patients by proper distance between beds and employment of cubicles. All attendants should be sure that they are not the carriers in the transfer of bacteria from one patient to another. With proper precautions strict isolation is not absolutely necessary.

The whole personnel (carriers and others of the Division area) should be placed in the best sanitary environment possible. Physical fatigue should be avoided, as well as exposure to cold and inclement weather. Overcrowding should be corrected. Particular attention should be paid to suitable clothing and sufficient bedding with provisions for drying the clothing worn by the troops.

Measles.—Measles was the second most common cause of death in the U. S. Army in the fiscal year 1915-1916. It is a highly infectious disease, and since it is transmissible during the unrecognized, pre-eruptive period, it is essential to attempt to isolate early. No amount of isolation after the disease is recognized can atone for the harm done before the diagnosis is made.

Early signs are suffused eyes and a temperature above 99° F. Isolation has possibly retarded the spread of measles, and to this extent is beneficial, in that it reduces the peak load of admissions to the hospitals and therefore results in less crowding and better care of the patients. Both of these factors probably lessen the incidence and severity of complicating pneumonias and empyemas.

When a case of measles occurs in a command medical officers should inspect every man therein at least once and preferably twice daily for early symptoms of the disease. Doubtful cases and men with suspicious respiratory symptoms should be promptly segregated and kept on a working quarantine for a period of two weeks after the appearance of the first case and for an additional two weeks after the initial crop of secondary cases. As new cases tend to crop out every ten to fourteen days special vigilance should be observed at this time in the face of an epidemic.

Cases evacuated should be isolated in wards adequately ventilated and warmed. Cubicle isolation should be adopted when possible. Should pneumonia complicate measles, the patients should be isolated in special groups away from the measles ward.

German measles, or rubella, has never been known to cause any important epidemic. It is mild and very rarely are there any complications or sequelæ which lead to serious results. Working quarantine suffices to control an outbreak of this disease.

Mumps.—Mumps, or epidemic parotitis, is important because of the disability it causes in the complicating orchitis, especially if active cases continue duty. Like measles, it is contagious before the disease is recognized, and is disseminated by secretions from the mouth and nose. Disinfection and thorough sterilization of mess kits and table utensils is necessary. Active cases should be isolated and sent to the hospital, and their clothes and bedding should be carefully sterilized. Contacts need not be isolated, but troops should be examined daily for swelling of the parotid, catarrhal pyrexia, inflammation of Stenson's duct, or tenderness of the angle of the jaw.

Diphtheria.—Diphtheria is a disease that can be prevented by certain approved methods which confer immunity to those who are susceptible. It is transmitted by secretions from the nose and throat. When cases appear in epidemic form, throat inspection should be made twice daily if possible for detection of carriers or suspects. These men should be put on working quarantine until two negative nose and throat swabs are obtained. Immunizing doses of 500-1,000 units of antitoxin should be given to carriers or to contacts who show a positive reaction to the Schick test. Active cases should be evacuated, and isolated in a base hospital. All articles soiled with secretions from the nose and throat should be disinfected. Attendants should maintain strict asepsis.

Scarlet fever.—Because of the serious nature of its complications every effort should be made to control the spread of scarlet fever in a command. Successful control depends upon early recognition of cases, complete isolation of patients, and the thorough disinfection or destruction of fomites. When a case occurs inspections should be made twice daily if possible, paying attention to pyrexial catarrh, desquamation, chronic rhinitis, or otorrhea. Contacts and carriers should be put on a working command under strict quarantine and Dick tested, if possible. All susceptibles may be given a temporary passive immunity by the scarlatina antitoxin method, or, preferably, an active immunity by injection of toxin detoxified by sodium ricinoleate. This latter method has recently been perfected (Larson: J. A. M. A., 86-14-1,000) and is especially valuable in that it confers immunity in about eight days. Active cases should be evacuated at once, and all clothing and other soiled articles should be disinfected. Inasmuch as a patient with scarlet fever is especially susceptible to secondary infection it is essential that there should be no contact either directly or indirectly between the individual patients in the same hospital. Failure to appreciate this point has led to high death rates from scarlet fever, measles, and pneumonia.

Influenza.—This is a highly contagious disease and is important because of its high morbidity. While the mortality is comparatively low, so many thousands may be stricken during an epidemic that fighting forces may be definitely impaired. The cause not being known, it is impossible to state definite control measures. During epidemics physical inspections should be made twice daily if possible, and all suspects segregated. Elimination of overcrowding, proper ventilation, sterilization of mess kits, and forbidding of dissemination of sputum and other discharges of the respiratory tract by coughing, spitting, and sneezing are especially important in its control. Stoppage of communications between companies and working quarantines delay its progress. Complicating pneumonia accounts for the mortality in influenza and can be avoided in many cases by early hospitalization of patients.

Common respiratory diseases.—The following acute communicable diseases are included in this group: coryza, acute laryngitis, acute pharyngitis, acute tonsillitis, acute bronchitis, and pleurisy. They seriously increase the non-effective rate in a command during the winter season, and are often confused with other respiratory infections during their early and most infectious stages.

Frequent presence of hemolytic streptococci in the discharges of these cases is a source of danger, since pneumonia may complicate. No quarantine restrictions are considered practicable, but certain general preventive measures should be observed, such as proper ventilation, elimination of overcrowding, and avoidance of coughing, spitting, and sneezing. Troops should be kept in the best of physical condition by avoidance of exposure, fatigue, and unsanitary conditions.

Tuberculosis.—Active cases should be evacuated as soon as recognized. Suspects should be carefully examined and hospitalized until diagnosed, when possible. Contacts need not be segregated. All sputum and articles contaminated with discharges should be disinfected or destroyed.

Septic sore throat.—This is caused by streptococci of human origin and is transmitted by milk or direct contact. Active cases should be evacuated, if practicable, and suspects should be examined and swabs made. They should be put on a working quarantine until found free from the organisms. Milk supply should be pasteurized until proven to be safe.

Vincent's angina.—This may become widespread in a command and should be carefully

watched for in cases of angina. Cases should be isolated, and mess kits and dishes should be carefully sterilized by boiling. Negative cultures must be obtained before the cases are released.

Cerebrospinal meningitis.—Epidemic meningitis in a command requires prompt control measures due to its high mortality rate and its serious complications. Active cases should be evacuated at once and isolated in separate wards. Contacts should be isolated in a similar manner. Carriers of this disease are common and should be detected by nose and throat swabs and segregated in working quarantines. Sunlight and fresh air usually clear carriers up promptly.

Whooping cough.—This is a specific, highly communicable disease transmitted by secretions of the nose and throat. Early diagnosis, segregation of cases, and disposal of discharges of the respiratory tract are the most important factors in its control. Active cases need not be evacuated. Troops out of doors recover more quickly than those isolated in wards.

Pneumonic plague.—This form of plague is very serious. It has a very high mortality. It is transmitted by contact, droplet infection, and by rat fleas. Eradication of rats and practice of simple hygienic rules should prevent its appearance. Cases must be immediately evacuated.

A BEE STING*

By EDWIN L. GOSS, M.D.

CARRINGTON, NORTH DAKOTA

This incident that happened to me occurred on a hot August day in the afternoon in a garden of trees with no breeze blowing. It was sultry and hot. I was dressed as usual when attending to the bees, wearing a veil, overalls, and rubber boots, as they were easily pulled on, and the bees could not so easily get up my pants, it being the tendency for a bee to climb up, all of which had a tendency to make me uncomfortably warm. I had just come from a hearty dinner.

Mr. Boylan and I had examined all of the hives for queen bee cells except two, when a bee got under my glove and stung me over the radial artery on my right wrist. This sting did not swell as much as usual with me, and of all the stings from bees that I have received none has been very extensively swollen. I worked for a very short time longer when I felt that I was getting sick, just sick all over. I started for the

house remembering that the time before this that I got stung I had an experience somewhat like the one I am about to describe, but not so severe, it being limited to an urticarial rash and itching. I hurried as fast as I could to get my clothes off and get into a tub of hot soda water. My head and face commenced to feel swollen and puffed, and I was commencing to itch all over, but more especially on the groins, abdomen, and scalp. I was not long in getting up stairs and removed part of my clothing when I lost consciousness and fell upon my face, the fall breaking my glasses and cutting my face around one eye. When I recovered from this shock I finished undressing and started for the bath room and reached it just in time for a copious evacuation of the bowels and a complete cleaning out of the stomach by vomiting, and I broke out in a profuse perspiration, while an intense itching and burning continued over my whole body, but more especially in scalp, groin, and lower part

*Presented before the Tri-County (North Dakota) Medical Society, October 14, 1926.

of the abdomen. As soon as I thought I could get into the bedroom I started and fell unconscious in the hallway in a draft. I do not know how long I lay here. When I recovered consciousness I got to the bed, went to sleep, and slept for about three or four hours without waking. I remember when I got into bed that the perspiration had completely dried, and in the fall I had sprained my wrist and perhaps fractured a rib, as this injury did not get well for two weeks. Barring the few bruises the only disability I felt after I awoke was an extreme exhaustion.

I believe that physically I was much below par with a blood pressure not much above a 100 S, since a little later in the season it was only 100 S, due perhaps to infected teeth, for after they were extracted my pressure came up to 130 S.

I believe that psychical causes had something to do with the attack being so severe; that I was apprehensive that the attack would be severe since it came on so rapidly.

What effect did the hearty dinner, the hot sultry day, the psychological incident, and the low physical resistance have to do with the severity of the attack?

I had four stings not long after this, all at the same time and had no reaction.

Since this occurrence I have seen several accounts of death from the sting of a bee and all of them but a few minutes after receiving the sting.

On a Bee Farm near Montreal, Canada, a girl received a sting on her lip and died in twenty minutes; she had had many bee stings before without serious consequences.

A CASE.—A boy, while riding a bicycle, had a bee fly into his mouth and sting him on the fauces and died soon afterwards. This might have been due to swelling of the glottis.

Dr. Mattson gives his experience with a case of bee sting:

E. M. Previous physical examination, negative, except that he was stung the summer before without special reaction. On May 5, about 6:30 p. m., he was stung by four bees, one over the left eye, two under the chin, and one on the right wrist. I saw him at 7:15 p. m. Symptoms, local swelling on various parts of the body, arms and legs, large blanched areas elevated from one to three inches across and various shapes, with intense itching; scrotum and penis, twice their natural size; skin around the eyes swollen and edematous, face pale, and temperature by mouth 96° F.; pulse, 76; and he felt as if he was going to faint.

Gave 1 c.c. of adrenalin hypodermically which relieved the faint feeling and intense itching immediately. The skin condition remained the same for two hours, at which time he was placed in a vapor bath at the temperature of 115° F. for one hour. After the bath the swelling had practically disappeared. The patient felt fine and looked normal except for the swelling at the site of the stings. A sample of urine showed a trace of albumin. The next morning the swellings at the site of the stings were about twice normal size and remained so for several days. All other symptoms disappeared after the vapor bath.

Condition, giant urticaria with shock—the adrenalin was given to overcome the shock and reduce the swelling—was effective in reducing the shock and reduced the itching but not the swelling—the vapor bath reduced the swelling by eliminating the toxins.

He asks the question "Whether the previous sting a year ago imparted any immunity, and what the condition would have been if these four stings were the first ones. One is led to believe that the patient was highly sensitive and would have been in worse condition if he had not been stung before, as it is known among bee keepers that previous stings give considerable immunity to the toxin.

DISCUSSION

In the brief discussion of this paper by the Society it was considered probable that the sudden and serious systemic involvement might have been due to the toxin being injected directly into the blood stream, and that the calcium content of the blood was low.

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

Meeting of October 20, 1926

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, October 20, 1926, at 8 p. m. Dinner was served at 7 p. m.

The meeting was called to order by the President, Dr. F. E. Burch. There were 31 members and one visitor present.

The minutes of the September meeting were read and approved.

Upon ballot the following members were elected to the Academy:

Dr. F. J. Hirschboeck, Duluth, Associate Member.

Dr. Henry E. Michelson, Minneapolis, Active Member.

Dr. Arthur W. Ide, St. Paul, Active Member.

The scientific meeting consisted of the following case reports:

Dr. Wm. Lerche (St. Paul) showed slides of cases of mediastinitis caused by infected mediastinal lymph nodes.

Surgical measures for the drainage of a mediastinal abscess are necessary as soon as diagnosis is made. In order to be able to make an accurate diagnosis, knowledge of the topography of the mediastinal lymph nodes is essential.

Lantern slides illustrating the topography of various groups of mediastinal lymph nodes and cases of suppurative and non-suppurative mediastinitis were shown.

Dr. E. M. Hammes (St. Paul) reported two cases as follows:

1.—The patient was a male, aged 41 years, right-handed, a physician, and was seen in consultation with Drs. Ide and Shillington on October 11, 1926.

The family history was negative.

The personal history shows that he has been a heavy drinker for years, especially during the past six months. He took both alcohol and whisky in fairly large quantities. In 1918, while in service, he had a severe headache, without any other symptoms, which continued for two weeks, and at which time a lumbar puncture was performed. The spinal fluid was normal. He denied venereal disease. In 1920 he had an acute otitis media with some discharge for about a week.

His present complaint dates back about one year, when both his wife and his partner noticed a slight exophthalmos of the left eye, which continued up to the present time. About six months ago he began to complain of an occasional headache, always localized over the left eye and deep in the orbit. The pain was described as severe and boring in character. This pain gradually grew worse in intensity, but remained confined to the left orbit. About four months ago he would have occasional attacks of nausea and vomiting, associated with dizziness. This occurred most frequently in the morning and was thought to be due to an alcoholic gastritis.

During the past two months he would have spells while driving his auto when the two sides of the road would gradually converge at a distance of about one-quarter of a mile, and the angle thus formed would come toward him until it almost reached his automobile, then his vision would become blurred, and he would have to stop driving for a few minutes. After this his vision would return to normal. At first these spells would occur about once a week, but during the past few weeks they have been as frequent as three a day.

During the past month the pain in the left orbit has been of undue intensity. However, with small doses of veronal he got sufficient sleep at night.

On October 5, while attending an ordinary obstetrical case (no instruments used) he became dizzy so that he fell over on the operating-table. With assistance he walked to another room where he went to bed and remained there for five days. During this time it was noticed that his pulse was as slow as 52.

On October 11 he was admitted to the Northern Pacific Hospital. At this time the physical examination was negative. All laboratory findings were

negative except that he had a leucocytosis of 12,000. His blood pressure was systolic 135, diastolic 80. The blood Wassermann was normal. The pulse varied from 80 to 54. During that night, after taking five grains of veronal, he was quite confused and had an occupational delirium. During that time he delivered several Indian women.

I saw him the next morning, at which time his mental condition was normal. He seemed slightly euphoric, but his wife said this was perfectly normal for him. On further questioning, his wife said that, as far as she could ascertain, his mentality had been perfectly normal throughout, that he had carried on successfully a large practice until October 4, when he developed the dizzy attack.

The neurological examination was negative throughout except for a slight questionable weakness of the left angle of the mouth. There was a slight left exophthalmos. His blood pressure was systolic 135, diastolic 80. A lumbar puncture was performed and 25 c.c. of clear fluid were removed. The spinal fluid pressure was 32 mm of mercury, 10 cells, a negative Wassermann, a negative colloidal gold curve, and a trace of globulin.

Following this lumbar puncture the pain in the left orbit definitely improved for ten hours, and the patient slept well that night. The pain in the left orbit returned the following day with undue severity. Another lumbar puncture was done at 5 p. m., when 40 c.c. of spinal fluid were removed. Examination of this fluid was negative except that it contained 700 cells, mostly polymorphonuclear leucocytes. The intra-orbital pain subsided entirely for five hours and he felt better than he had for several weeks.

At 10 p. m. he developed a very severe diffuse headache and became extremely restless. It was necessary to apply ice constantly to his head in order to get some relief. About 3 a. m. his restlessness subsided. About 4 a. m. he suddenly became stuporous and markedly cyanotic. At 10 a. m. his blood pressure was, systolic 185; diastolic 110. He was stuporous and he had some convulsive twitches of the left arm and hand. At 11 a. m. his blood pressure was, systolic 220, diastolic 120, pulse 80, respiration irregular.

The neurological examination was negative throughout except for an increased knee jerk on the left side and a positive Babinski on the right side.

Another lumbar puncture was performed, and 30 c.c. of slightly cloudy spinal fluid were removed. His breathing became more regular, and the cyanosis improved. After about 15 c.c. of spinal fluid had been removed the blood pressure dropped to systolic 148, diastolic 90. His general condition remained quite satisfactory for thirty minutes when he suddenly died from respiratory failure.

An examination of the fundi made by Dr. Louis Nelson on the 12th of October showed an edema of the right nerve head and a marked edema of the left nerve head, with hemorrhage in the left fundus. His examination of the ear was negative.

Our diagnosis at first was either a cerebritis, due to chronic alcoholism, or a brain tumor, probably left frontal. Following the second lumbar puncture marked cellular increase was noticed in the spinal fluid, and we felt perhaps we were dealing with a ruptured brain abscess. When the sudden stupor

developed we felt perhaps he had a glioma with softening, with hemorrhage into the substance of the tumor mass.

A postmortem by Dr. E. T. Bell, pathologist of the University of Minnesota Medical School, revealed the following:

"The scalp and calvarium are normal. There is no excess of fluid beneath the meninges. The surfaces of the brain are markedly flattened so that the external surfaces are practically smooth. The vessels are distended with blood. There are no areas of softening palpable. The cut surface shows a fairly circumscribed tumor mass in the right frontal lobe, below and anterior to the anterior end of the right ventricle. On section this tumor appears to be made up of a number of small cysts up to 1.5 cm. in diameter. Each of these cyst-like cavities contains a grape-like, clear, sharply encapsulated mass, which on section contains a tenacious mucoid material. The cysts suggest those associated with echinococcus. The central portion of the tumor mass is firm, apparently necrotic in some portions. There is no hemorrhage. Medially the tumor mass can be readily separated from the brain substance. Elsewhere the brain is apparently normal. There is no hydrocephalus. The base of the skull shows marked flattening of the optic nerves. No other abnormalities. The pituitary is normal.

"Microscopic sections of the tumor show a degenerated glioma; many fat granule cells; nothing to suggest echinococcus disease.

"Diagnosis: Cerebral glioma."

This case presented several interesting points. The localization of the pain and the evidence of increased intracranial pressure manifested by the choked disc, more marked in his left fundus, strongly suggests an intracranial lesion in the left cerebral hemisphere and, because of the paucity of symptoms, in his left frontal region.

Another interesting point was the normal mentality which this patient presented throughout the course of his illness until three days prior to his death.

DISCUSSION

DR. C. EUGENE RIGGS (St. Paul): This report of a frontal tumor, by Dr. Hammes, is interesting and most unusual because of the absence of all symptoms characteristic of involvement of the frontal area. The diagnosis of frontal lobe tumors may be extremely difficult or even impossible to make as they may show no localizing symptoms whatever. Mental disturbances or mental deterioration common to other forms of dementia are usually present in a growth affecting this region. The chief diagnostic criteria are these symptoms and the absence of a sign of a tumor elsewhere. Frontal tumors, as reported by Dr. Hammes, are exceedingly rare—so rare that the history and pathological findings of this case merit publication.

DR. W. A. JONES (Minneapolis): I am almost persuaded that I know very little about brain tumors except in a few instances. There is no more disheartening or uncertain field of research or investigation that one can work in for the simple reason that one never knows how many tumors may be found.

I once localized, and Dr. Herbert Jones operated on, a cerebellar tumor. During the administration of the anesthetic the boy died temporarily on the table, probably due to the dropping down of his brain stem into the foramen magnum, which cut off his vagus nerve. Everything was done to resuscitate him, but nothing was accomplished until it suddenly occurred to me that an immediate opening of the skull down to the foramen would relieve the situation, and as soon as the surgeon reached the point the boy gasped and came back, having practically been dead for forty minutes. He lived after this for a month, then died the usual brain-tumor death. At the autopsy it was found he had sixty tumors scattered over his brain mostly on the outside, but the cerebellar tumor which was localized was found intact.

In another case a young man had hemianopsia with intense headaches and convulsions. The diagnostic symptoms were eye symptoms. A temporal decompression was done on both sides at two-weeks intervals, and then the brain was exposed at the parieto-occipital region, and a large tumor of seven ounces' weight was removed. It was not encapsulated, but was fixed to a deep surface of white substance by a peduncle.

This man lived thirteen years. He was able to do little things about the farm and the house, but was unequal to any mental tasks. He began to go down gradually, mentally and physically, with occasional convulsions and finally developed into a terminal dementia. He died two years ago.

This case was gratifying from some points of view, particularly the localization of tumor and its removal, but the patient had a rather distressing life thereafter, unhappy, dull, and stupid.

To the neurologist who likes to locate his pathology, brain tumors are a very attractive field, but usually he knows that he is working without any surety of his find. He may unexpectedly find a tumor, a cyst or something of that order, and feel extremely pleased with himself to think he was able to locate it and prove its location by operative procedure or postmortem examination. Although he accomplished something, perhaps by decompression or spinal drainage, there are but few patients with brain tumor who make a full recovery. The percentage of failures and the percentage of deaths are very high, but the lure of the research man is still there.

The cases which Dr. Hammes has shown and described are cases which are almost impossible to diagnose except from careful observation, and when we know the tumor is a glioma we never know how far the gliosis extends. It may occupy a small area; usually it occupies an area in the white substance which extends from one hemisphere to the other and not infrequently invades the spinal cord, and yet the diagnostic symptoms are few and unreliable. Consequently, gliomas are frequently overlooked because of disseminated hindrances. The occasional case then which comes up for diagnosis and research procedure is a very gratifying one, but on the whole the larger number of cases are either undiagnosed or impossible to remove.

DR. HAMMES: This man continued with a large practice until nine days before his death. He had no mental involvement whatsoever except that I thought he was a little bit sluggish, and I also

thought there was a little euphoria, but his wife said that was perfectly natural.

2.—The second case was a patient who died from the inhalation of cyanide fumes, living six weeks after the exposure.

The clinical picture was one of confusion and delirium. The pathological picture was a diffuse encephalomalacia.

This case will be reported in detail with complete microscopic findings at a later date.

Dr. E. L. Gardner (Minneapolis) reported the following case:

This was a case of transposition of the viscera in a woman forty years of age, who reported because of many indefinite symptoms. The physical examination and *x*-ray examination (demonstration of films) show a "mirror image" of the normal thoracic and abdominal organs.

X-ray reports show complete transposition in about 1 to 1,500 cases; autopsy reports average about 1 to 5,000 cases; and cadavers 1 to 10,000. The army reports showed incidence somewhere between the *x*-ray and autopsy records.

Complete transposition is more common than partial. It has been suggested that the cause may occur in the germ cell, but recent work at Johns Hopkins Medical School shows that the outer layer of the myocardium, which is first differentiated in the embryo, runs in a normal direction, while the other is reversed. It had been suggested by earlier investigators that these cases of complete transposition might be related embryologically to the "identical twin," that is, one of the same appearance, the same sex, etc. There is some evidence favoring this thesis: in taking finger prints of identical twins they find that fingers of one hand are the exact image of the other.

There is another type of transposition, due to an anomaly of rotation, where the heart alone is partially transposed; the main part of the heart lies to the right of the midline, but the vessels are normal.

Complete transposition is interesting from the surgical standpoint. In the literature a large number of cases of complete transposition are reported where there is failure of the normal rotation of the colon, and the cecum has stopped high in the abdomen. Some cases are reported where the rotation only reaches the splenic flexure, and the appendix is on the right side, although the liver is on the left.

DISCUSSION

DR. WILCOX (Minneapolis): What was the complaint that precipitated the examination?

DR. GARDNER: Tachycardia, principally and a lot of neurasthenic symptoms.

DR. ULRICH: I have a patient forty-eight years old, who has situs transversus. She has a diverticulum of the duodenum. She complains of vague abdominal symptoms. I do not know whether the diverticulum is the cause of the abdominal distress or not.

Dr. Archa Wilcox (Minneapolis) reported the following case:

Mrs. S., aged 65, injured in an automobile accident July 20, 1926. The injury consisted of a bilateral fracture of the inferior mandible; also incomplete fracture of the right femur with general lacerations. The fracture of the femur presented no complications as regards treatment, and union was complete. The fracture of the inferior mandible, however, presented certain complications on account of the fact that the patient had a complete set of false teeth. There was present the usual senile changes and atrophy in the mandible, and there was considerable absorption of the alveolar processes of the upper jaw. The problem which presented itself was holding these fragments together with some type of internal fixation combined with external fixation. It was first thought an interior splint made from a mold of the dental plate would be practical, but before doing this the idea suggested itself that we use the false teeth plate for splints. The upper and lower plates were, therefore, wired together, taking out the two incisors from the upper and lower plates for an aperture through which the patient might be fed. With the assistance of a dentist the two united plates were placed in the patient's mouth, and the lower jaw was molded into the lower plate. This was accomplished without much difficulty, and when the gums were in place the jaw was fixed by an elastic tape running over the occiput of the head over the jaw and also transversely around the neck and across the front of the jaw. The patient was very comfortable, and by using frequent mouth-washes and taking liquid diet through the aperture made by removing the incisor teeth she was able to wear this apparatus and the plates without removal of the same for a period of six weeks, at which time complete union had taken place and an extremely satisfactory result obtained. Upon removal of the splint there was no actual ulceration of the mucosa and only slight erosion at one portion directly in the mandible.

It will be necessary for this patient to have some readjustment regarding this fitting of the lower plate, but the result was so satisfactory it seemed wise to report this method of procedure in a case which at first appeared to present a rather difficult problem.

Dr. Herbert Jones (Minneapolis) gave a further report and showed *x*-rays of the case of traumatic rupture of the diaphragm which he reported at the September meeting.

Dr. H. L. Ulrich (Minneapolis) reported a case of hypoglycemia.

DISCUSSION

DR. GARDNER: I have never seen anything like it. The nearest approach to something of this type was in a youngster, fifteen or sixteen years of age, who came in with glycosuria. On repeated blood-sugar tests we found the blood-sugar running much lower than normal. I followed that case two or three years, and the patient finally died in diabetic coma. That was before the days of insulin. I believe Dr. Ulrich's case may develop diabetes.

—CARL B. DRAKE, M.D.

Secretary

THE JOURNAL-LANCET

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The Official Journal of the
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The Hennepin County Medical Society
The Soo Railway Surgical Association
and The Sioux Valley Medical Association

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PHYSIOTHERAPY AIMS

This comparatively new method of treatment, organized as it is and directed as it is in most places by competent and trained people, is destined to do a great deal of good. The only fly in the ointment is that many of the cults, now being slowly retarded in their work, have been obliged to take up something which means heat, with or from electricity, and the unfortunate result is that they have adopted several methods of modernized treatment in order to carry on their own work and try to slip in the back door of medicine.

The only remedy for this is to form better and higher grades of physiotherapy and to insist that it be carried out in the manner prescribed by its inaugurator. There is too little advertising in the medical journals as to the value and the methods of application of physiotherapy. During this silence the cults are gradually informing their patrons that they, too, can give electric massage, physiotherapy, and other methods of treatment by various types of lamps.

There is no doubt a large field for the intelligent carrying out of physiotherapy. It has, perhaps, not reached its perfection as yet, and it probably has not enough well-trained instructors to carry out the doctor's orders, but this will right itself in time provided the operations are carried on by well-educated physicians and

applied to selected cases. Sometimes we think that the physiotherapist forgets the individual and thinks only of application of a method, from whatever cause. And this in itself brings some doubt into the minds of the medical profession as to its value as a therapeutic agent. When it becomes stabilized, organized, and used only by reputable men, it will still be adopted by some of the cults, just as other remedial medical agents are used by the irregulars. They borrow it from the regulars and claim it as original.

It is rather entertaining to hear Dr. O'Brien, of the Pathological Department of the University of Minnesota, describe his experience with some of the cults, and it is quite evident that they are slacking up, not only in numbers, but in favor. The people will stand for a new method of treatment for a while. Some of them can be relied upon to patronize the irregulars all the time, but, evidently, the cult, if it has any real stability, will hold its own, but if once it is uncovered and found to be deficient or mystic or irregular or deceitful, it soon begins to wane, and no power on earth can keep it up after that. For instance, we hear nothing more about the Abrams treatment. It began to die with his death, and his testing machines which claimed so much and contained so little have fallen into disuse, just as other similar machines that have been brought into use by some of the cults have proved their uncertainty and their lack of value.

It is rather better for people to know of these things and in some way to educate them to believe in and stick to what is a real serious method of healing carried on by reputable men and women who are trained in their line of work, so that the untrained and the unskilled and often the ignorant may not be able to force their opinions upon the people. This can be accomplished only by reasonable educational methods and reasonable, rational forms of treatment.

THE INTELLIGENCE TEST

In a more recent article in the *Minneapolis Journal* Judge Kavanagh referred to the astonishing things disclosed by the intelligence test in relation to crime and the general public, all of which will probably stir up a good deal of controversy; that is, the discussion will be between the psychologists and the army men who made these intelligence tests, and doubtless Judge Kavanagh may go pretty far in his findings, but to the average reader they sound very convincing. He believes, for instance, that much greater care should be exercised in the field of inquiry, and he suggests that "the draft presented a per-

fect cross-section of American mental life. Tests were adopted and applied by the Government to 94,004 white recruits, and 18,891 colored soldiers. Sixty-three per cent of the whites and 94 per cent of the colored men had a mental age of less than 14 years, to be exact 13.1 years. Thirty per cent of the white men and 79 per cent of the colored men measured a mentality of less than 12 years. Ten per cent of our white soldiers and 48 per cent of the colored showed a mental age of less than 10 years.

"The accepted definition of a moron is an adult person who has a mental intelligence of from 7 to 12 years of age, and it is inferred from investigation that a person with a mental age of less than 13 years is a feeble-minded person. If this be true and the enthusiastic psychiatrists Uncle Sam sent out to measure his soldiers were correct, then 47 per cent of our Negro population are feeble-minded, so that nearly half of our white population and two-thirds of our colored people, including waiters and Pullman porters, would move in on Uncle Samuel's farm."

The writer said, further, "The United States army medical report made us the laughing stock of the world, quite unjustly so, however, for our drafted army contained hundreds of thousands born in foreign lands and those whose parents were born abroad. Therefore, it appears from the Surgeon-General's report that half the whole wide world is just about feeble-minded." The editor thinks this percentage is too low. It is further stated that "the only reliance of those among us who are feeble-minded must be on the medical profession, and it appears from that same report that the medical branch of the army rated lower in mental age than any other part of the service. Anyone can frame a list of questions which in a way will test intelligence. The questions and answers may disclose to some extent the mental state of two persons: the one who got up the questions and the person who made the answers. We need not grow frightened over the army tests. They do not show a low mental age on the part of the soldiers so much as they show a lack of intelligence on the part of those who devised the mental tests."

Judge Kavanagh thinks "the deepest mischief of the matter and the cause for grave public alarm arises from an attempt to employ like tests in judging and in dealing, not merely with persons convicted of crime, but also those unconvicted and whom these half-baked psychiatrists say may yet commit crime. If the former get their way a law will be passed by which you or

I can be pulled in off the street so these gentlemen or their assisting very young men and very young women may apply these silly tests to us, and on the result anyone may be confined for life on some farm established to hold the mentally deficient."

A further quotation says: "A soldier who was one of the greatest sanitary engineers of his time, who would transform cities that were reservoirs of pestilence into places of health and beauty, submitted to those same tests, and he registered a mental age of 8 years. A noted writer and publicist who submitted to these same measurements led the general by three years. He registered 11 years. The mayor of one of our greatest cities and a man of great political sagacity pulled down nine years. Each of these feeble-minded men would have qualified as a fit inmate of the farm. It must be kept in mind that we are dealing with feeble-mindedness. The only aspect the psychiatrist is concerned with is criminal affairs. Insanity demands a very different consideration."

The entire article referred to above is one which will cause many people to stop and think, and it is possible that some of the statements that were made are not altogether true, but, in the main, they are accepted among people who understand such matters. Psychology is termed a new science, and we use the word "psychology" as applied to behavior. "The greatest book ever written on the subject was the old Testament. The profoundest explorers into the mind and soul of man wrote thousands of years ago. Everything changes with the centuries except the heart of man, and that never changes. Thirty-five hundred years ago in that greatest of all books on psychology it was written, 'Because the punishment of an evil deed is not executed speedily, therefore, the hearts of the sons of men are set in them to do evil.'"

It is quite probable there have been some variations from these earlier findings, and it is quite likely people apply wrongly the heart as the organ of the emotions while as matter of fact we know our hearts are run and managed by our heads even though various sections of the brain are employed for its various mechanisms.

Another quotation says that "After the returns of the army tests were in and tabulated, the astonished authors of the system grew frightened and sought to run away from the absurd and unexpected results. Some of them wrote books interpreting the reports. If mental age meant anything else than mental age, why did they not say so? If they meant anything other than what

they said, we are not interested. The fact is, if the experiments had been conducted on a small scale they would have passed as exact. Conducted on such a large scale the immediately apparent absurdity of such a claim rendered such claim impossible. The army report in its very failure illustrates better than could have been demonstrated in any other way that it is impossible to measure the mind of man by a rule of the thumb."

Judge Kavanagh goes to the limit and thinks that "feeble-minded persons who are normally timid and weak have neither the cunning nor the courage to adventure; that they are far more easily deterred than the strong-minded. The weaker the animal in the woods, the greater its timidity. There is absolutely nothing to support the claim that feeble-mindedness is a source of crime, except the kind of silly psychological tests we have been reviewing and the bold statements of eight or nine inventors of tests who spend much of their time disputing with one another about the reliability of their respective methods. The matter of late has been scientifically and repeatedly examined by real scientists so that all the former estimates have been modified by reliable persons and in many cases absolutely abandoned."

Judge Kavanagh goes on at length to discuss the prisoners and the army and the people at large, and he finds that oftentimes the prisoner who is in the penitentiary exhibits more intelligence by the use of these tests than does the outsider. And yet with the education of the last twenty-five years, which is presumably improved though we doubt it, crime has been increasing, particularly in the United States.

The Judge further cites the story of one man, a thief, who says, "I have been associated with some of the cleverest thieves in the country, and I have never seen anything wrong with their brains. I spent twenty years in crime; I was put through all kinds of criminal tests; I had my head examined, and bumps were discovered that with any jury of phrenologists would have readily hanged me. I had the knee test, and my toes were tickled with a toothpick, but I kept on stealing. However, about fifteen months ago I discovered that there was nothing wrong with my brain, as criminologists had stated, but the trouble was that my heart was wrong, and when I got that right I never had any more desire to steal." (Too short a time has elapsed to know whether this man has fully recovered or not.)

We are sorry we cannot quote the entire article, We would like to do so very much but perhaps

we are asking too much of our readers. Anyone who has followed Judge Kavanagh's articles should be very much impressed with his statements, and we each have to take them from our own points of view.

MISCELLANY

Conference of Constituent State Medical Associations

The annual conference of the State Medical Associations took place in Chicago on November 19 and 20.

Following the election of Dr. W. G. Ricker, of Vermont, as chairman of the Conference, an address was given by Dr. Wendell C. Phillips, President, American Medical Association.

Dr. D. S. Dougherty, Secretary of the Medical Society of the State of New York read a paper on the Councilor District Medical Society. Dr. Morris Fishbein, editor of the Journal of the American Medical Association, gave a practical talk concerning his Impressions of Six State Medical Associations, stressing the best thing to avoid in the formation of annual State programs.

Following luncheon the afternoon session opened with an address by Dr. Jabez N. Jackson, President-elect of the American Medical Association. Dr. Edward Follansbee, of Cleveland, spoke concerning the need of a uniform constitution and by-laws. Dr. F. A. Long, Editor of the Nebraska State Medical Journal, read a paper on State Journalism in Medical Organizations. Dr. D. E. Sullivan, Secretary of the New Hampshire Medical Society, Concord, N. H., emphasized the importance of co-operation with other professions and the laity.

During the evening a sumptuous banquet was enjoyed at the Virginia Hotel.

An inspirational talk was given by Dr. R. M. Schaufler, President of the Kansas City Health Association. In this address Dr. Schaufler urged the importance of periodic health examinations and closer harmony with the state health agencies.

Dr. W. S. Leathers, Vanderbilt University, was unable to be present. The Present Status of Periodic Health Examinations was ably presented by Dr. J. M. Dodson, Executive Secretary of the Bureau of Health and Public Instruction, American Medical Association.

During the balance of this session, time was given for reports from secretaries of all constituent State Medical Associations.

—J. G. LAMONT,
Acting Secretary of the North Dakota
State Medical Association.

NEWS ITEMS

Dr. James Allaire has moved from Anamoose, N. D., to Plaza, N. D.

Dr. John B. Deaver, of Philadelphia, was a visitor in Rochester during the first week of December.

Dr. Alfred Hoff, of St. Paul, was married on December 1, to Miss Marjorie Monkhouse, also of St. Paul.

Dr. R. L. Wilder has become associated with Drs. Rodda and Robb, of Minneapolis, and their office has been moved from the Abbott Hospital to 1801 Lyndale Ave. So.

The Deaconess Hospital building at Billings, Mont., has been practically completed, but will not be opened until spring.

Dr. J. G. Millspaugh, of Little Falls, has gone to California to spend the remainder of the winter. He will be at Arcadia, Calif.

Dr. C. V. Lynde, of Medford, died last month, at the age of 68. Dr. Lynde was a graduate of the General Medical College of Chicago, class of '83.

Ground was broken last month for the new addition to St. Andrews hospital building in Minneapolis. The new addition will add 50 or 60 beds to the present capacity of St. Andrews.

Dr. F. M. Constans, formerly of the Mayo Clinic, announces his association with Dr. H. E. Binger, 824 Lowry Building, St. Paul, for practice limited to eye, ear, nose, and throat.

Dr. Theo. P. Groschupf, of Bemidji, and Miss Julie Patricia, of Northfield, were married last month. Dr. Groschupf is a graduate of the Medical School of the U. of M., class of '24.

Dr. Joseph Mark, of Minneapolis, died on December 1, at the age of 75. Dr. Mark took his medical course in Germany and came to Minneapolis forty years ago, and practiced here until his death.

Hundreds of children in the Minneapolis public schools are attaining a 100 per cent rating for the care of their teeth. All the children in two rooms of the Clinton School were given such a rating last month.

Dr. R. E. Scammon, Professor of Anatomy, University of Minnesota, gave a Mayo Foundation lecture in Rochester, on the evening of December 3. His subject was "Growth of the ductless glands in man."

Funds to the amount of \$40,000 for a new hospital at Valley City, N. D., have been practically pledged by the citizens of that place. The Sisters of Mercy will erect a 50-bed hospital building to cost about \$150,000.

Dr. Donald D. Van Slyke, member of the Rockefeller Institute, gave a Mayo Foundation lecture in the Mayo Clinic lobby on the evening

of November 22. His subject was, "Urea Excretion in Nephritis."

Dr. Joseph Dasset, of Minneapolis, a recent graduate of the Medical School of the U. of M., has spent a year's internship in the Jersey City (N. J.) Hospital, and will return there for another year in that hospital.

Dr. H. Kenyon Dunham, of the University of Cincinnati, was the guest in Minneapolis last month of the staff of Lymanhurst Hospital and of the Hennepin County Tuberculosis Association and gave addresses before each of these.

At the annual meeting of the Lyon-Lincoln County Medical Society held at Marshall last month, the following were elected officers: President, Dr. A. H. Hoidale, Tracy; vice-president, Dr. Sigfred Engh, Cottonwood; secretary-treasurer, Dr. H. H. Workman, Tracy.

Dr. W. J. Conan, a pioneer physician of the Northwest, died in Milwaukee, Wis., last month at the age of 82. Dr. Conan graduated from Rush and began practice in Wisconsin, later moved to and practiced in Fargo, and then went to Superior, and became interested in iron mining.

Dr. James H. Beatty, of St. Cloud, died on November 26, at the age of 56. Dr. Beatty was a graduate of the University of Minnesota, College of Homeopathy, class of '95 and specialized in obstetrics and gynecology. He was known as the father of the Boy Scouts of St. Cloud and was active in church matters.

Preliminary plans have been adopted in Minneapolis for holding a great Northwest conference in this city on child health and parent education. The tentative dates for the conference are February 17, 18, and 19; and speakers of national reputation will be invited to discuss the problems of the various clubs working in this line.

Dr. Christian F. Warn, of Minneapolis, died on December 2, at the age of 65. Dr. Warn studied medicine in Stockholm and took advanced courses in the German medical schools and in the Medical School of the U. of M., when he came to this country in 1888. He practiced in Minneapolis from that date to the time of his death.

The Sioux Valley Medical Association is looking forward to one of the best meetings in its history, which takes place on January 18 and 19. Lectures and talks will be given in the forenoon of each day, and the afternoons will be devoted to clinics. The principal speakers thus far en-

gaged for the program are: Drs. B. C. Corbus and L. D. Snorf, Chicago; Dr. M. M. Meyers, Des Moines, Iowa; Dr. F. S. Clough, Lead, S. D.; and two other men have not yet been selected.

Dr. Oscar Gans, Professor of Dermatology and Dermatopathology, University of Heidelberg, gave the second of the series of Mayo Foundation lectures in the Clinic Assembly Room on the evening of November 23. His subject was, "Skin manifestations of the disorders of the sympathetic nervous system." Immediately following this lecture Dr. Albert Kuntz, Professor of Anatomy, St. Louis University, gave a Mayo Foundation lecture on "Muscle tonus in relation to sympathetic innervation."

Dr. Aldo Charles Massaglia, formerly professor of bacteriology in the Medical School of the University of North Dakota, died recently at the age of 50. Dr. Massaglia was educated in Italy and was a research man of noted ability. He contributed a number of highly scientific and interesting articles to THE JOURNAL-LANCET while in North Dakota. At the time of his death, which occurred on shipboard on his way home from Italy, where he visited during the past summer, he was professor of bacteriology and pathology in the University of Mississippi Medical School.

Cass County (N. D.) Medical Society

On October 22d, Dr. A. J. Meyers, of Minneapolis, gave a very interesting talk before the Society, on Tuberculosis. Included in this talk was a résumé of research work being done in several medical centers in the country. This proved most interesting to the members.

On November 30, Dr. J. P. Schneider, of Minneapolis, spoke on the subject of periodic health examinations. Dr. Schneider dealt with the technic of such examinations, and then spoke on the routine office handling of these cases, charges for examinations, etc. Following a discussion of this paper he spoke briefly on "Pernicious Anemia."

—LESTER J. EVANS, M.D.
Secretary

Attractive Office for Rent in Minneapolis

Call or write the office (404 La Salle Building, Minneapolis) for information.

Minneapolis Office for Rent

Office space in Donaldson Building for rent. Rate very reasonable. Call Ge 2564 or address 251, care of this office.

Locum Tenens Work in Minneapolis Desired

I desire locum tenens work in Minneapolis for any length of time. Best of references. Address 241, care of this office.

Laboratory Work Wanted

Laboratory technician, with experience in blood chemistry, serology, and basal metabolism, desires position in doctor's office or hospital. Two years in college. Also can do clinical work. Address 245, care of this office.

Heidbrink Apparatus for Sale

I have retired from practice and wish to sell a Heidbrink Gas apparatus, No. 2640, at a bargain. Includes regular case for carrying packed outfit. Address 248, care of this office.

Position Wanted in Twin Cities

A physician doing eye, ear, nose, and throat work in a small Minnesota city wants part or possibly full time work in the Twin Cities. Address 246, care of this office.

Doctor Wanted

At Sanish, North Dakota. Population, 500. A bridge which is now being built over Missouri River, to be done next August, will open large new territory. Last physician here took in \$3,600 in cash last year. Address H. J. Bugge, Sanish, N. D.

Assistant Wanted

Wanted, on or before January 1, an assistant physician for general practice in Southern Minnesota. Must be a male, single, and protestant. A Scandinavian preferred. Will pay \$150 a month, including board and room. Address 247, care of this office.

Locum Tenens Wanted

Physician is wanted to take care of general practice, mostly office work. Western Minnesota town, population 2,000. Modern office with complete Physiotherapy equipment. Privilege of purchasing office any time within six months. Address 253, care of this office.

Practice for Sale

An old-established practice in North Dakota city of 15,000 population. Reason for selling, death of physician. Practice includes all office furniture and equipment and instruments for surgery and eye, ear, nose, and throat work. This practice of thirty-three years standing offers an excellent opportunity for the right man. Address 240, care of this office.

Hospital Position Wanted

Position wanted by a young woman, registered nurse in North and South Dakota, graduate of a Bismarck hospital training school. Has had four years experience in office and country practice work especially in O. B. Some experience in x-ray work and laboratory. At the present surgical nurse. Can start January first. Address 239, care of this office.

PHYSICIANS LICENSED AT THE OCTOBER (1926) EXAMINATION TO PRACTICE IN MINNESOTA

BY EXAMINATION

Name	School and Date of Graduation	Address
Benepe, James Lorimer	Wash. Univ., Mo., M.D., 1926	Ancker Hospital, St. Paul, Minn.
Borgerson, Arthur Henry	N. W., Cert. Med., 1926	Ancker Hospital, St. Paul, Minn.
Cronwell, Bernhard Johannes, Jr.	U. of Ill., Cert. Med., 1926	Ancker Hospital, St. Paul, Minn.
Fellows, Manley Fording	U. of Ill., Cert. Med., 1926	Ancker Hospital, St. Paul, Minn.
Hanlon, Frank Robert	Jefferson, M.D., 1925	Mayo Clinic, Rochester, Minn.
Hart, Alfred Benjamin, Jr.	St. Louis Univ., M.D., 1925	Owatonna, Minn.
Jordan, Ferdinand Michael	U. of Pa., M.D., 1925	1150 1st St., Rochester, Minn.
Larson, Arthur J.	N. W., Cert. Med., 1926	Ancker Hospital, St. Paul, Minn.
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